FEDERAL ON-SCENE COORDINATOR'S AFTER ACTION REPORT

FOR THE

CHEM-FAB REMOVAL SITE

DOYLESTOWN, BUCKS COUNTY, PENNSYLVANIA

NOVEMBER 8, 2012, THROUGH, SEPTEMBER 30, 2016

UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

PHILADELPHIA, PENNSYLVANIA

Federal On-Scene Coordinator's After Action Report
Chem-Fab Removal Site

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Federal On-Scene Coordinator's After Action Report
Chem-Fab Removal Site

REGION III FACT SHEET

CERCLA REMOVAL ACTION

SITE:	Chem-Fab Removal Site
SIZE:	250 acres
LOCATION:	Doylestown Township, Bucks County, Pennsylvania
APPROVAL DATE:	Original Funding Request November 8, 2012
	Increase in Funding Request September 19, 2013
PROJECT DATES:	November 8, 2012 – December 2016
DESCRIPTION:	The Chem-Fab Removal site, located in a mixed residential, commercial and industrial area, operated as a metal plating facility from 1965 to approximately 1994. In 1995 the U.S. Environmental Protection Agency (EPA) removed more than 100 drums of hazardous substances and more than 8,000 gallons of chromic acid waste that had been left on the site. The Site was then referred to the Pennsylvania Department of Environmental Protection (PADEP). Since then PADEP has continued monitoring groundwater. A municipal well near the site was taken off-line to avoid the use of it as a drinking water source and nearby residences and businesses were connected to Doylestown's public water system. In 2010 PADEP turned the site over to the EPA.
NATIONAL PRIORITIES LIST STATUS:	The Chem-Fab Removal site is on the National Priorities List (NPL).
HAZARDOUS MATERIALS:	Groundwater wells located in the vicinity of the Chem-Fab Removal site were found to contain elevated levels of volatile organic compounds (VOCs), including trichloroethene (TCE), and tetrachloroethylene (PCE), and Hexavalent Chromium (Cr^{6+}).
QUANTITIES REMOVED:	Under the present removal action, approximately 2,440 tons of contaminated soil was excavated and shipped to a disposal facility.
ON-SCENE COORDINATOR:	Eduardo Rovira, Jr.

REMOVAL CONTRACTOR:	NorthStar (formerly WRS) was the main removal contractor. NorthStar on-site subcontractors Passerini and Sons Inc. constructed the water main, Roher Mechanical Services Inc. constructed the plumbing inside the residential home and WPB Enterprises installed the depressurization system at the main building at the Site.
PROJECT CEILING:	$ 2,738,000
ESTIMATED COSTS:	$ 1,129,548

I. FOREWORD

As mandated by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40 of the *Code of Federal Regulations* (CFR), Part 300, the On-Scene Coordinator (OSC) is required to provide coordinated federal response capability at the scene of an unplanned or sudden release of oil or hazardous substance that poses a threat to the public welfare or the environment. In addition, the provisions of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), promote a coordinated federal, state, and local response to mitigate situations at hazardous waste sites that pose an imminent and substantial threat to public health and/or the environment.

The hazardous substances in the soils at the Site have been determined to be responsible for contaminant vapor intrusion into a building on the property and groundwater contamination that has impacted groundwater wells. The conditions at the Chem-Fab Removal site presented an imminent and substantial threat to human health and the environment because of the uncontrolled release of a hazardous substance to groundwater, thereby providing a legal basis for federal response activities. The provisions of the NCP, Section 300.415, were implemented by U.S. EPA Region III of Philadelphia, Pennsylvania.

The OSC would like to thank all agencies and individuals who provided valuable assistance and expertise to ensure the successful completion of this cleanup effort.

Eduardo Rovira, Jr.
On-Scene Coordinator
U.S. EPA Region III
Philadelphia, Pennsylvania

II. SUMMARY OF EVENTS

This report discusses the removal action performed at the Chem-Fab Removal site (the Site) in Doylestown Township, Bucks County, Pennsylvania, from November 8, 2012, through December 2016.

A. SITE CONDITIONS AND BACKGROUND

1. Initial Situation

Prior to construction of the former Chem-Fab facility, land use at the Site was mainly agricultural. The Chem-Fab facility was constructed in the mid-1960s. It operated as an electroplating and metal etching company until the early 1990s. Electroplating and metal etching operations generated wastes that included ferric chloride, mineral spirits, chromic acid rinse water and sludge, chromic acid, sulfuric acid, sodium bisulfate, sodium hydroxide, and lime. A TCE vapor degreasing process was used at the Site until 1973. In 1994 and 1995, EPA conducted a removal action at the Site. EPA removed 117 drums and 8,400 gallons of liquid wastes, including chromium-contaminated wastes, from the underground storage tanks (USTs) as well as other solid wastes and fuel oils. During the response action, EPA discovered information labeled on drums and other containers indicating the presence of xylene, toluene, hydrochloric acid, sulfuric acid, nitric acid, caustic soda, methyl isobutyl ketone, polymeric isocyanate, benzene sulfonic acid, nickel rinse waste, methylene chloride, ferric chloride, chromate waste acid, and anhydrous ammonia. PADEP continued its investigation and requested that EPA include the Site on the NPL. EPA proposed the Chem-Fab Removal Site for the NPL in September 2007. The Site was formally added to the NPL in March 2008. From September 2009 through May 2013, WESTON collected additional soil, groundwater, and vapor intrusion samples to supplement previous results from investigations conducted by PADEP. Based on the data collected, the EPA concludes that the concentrations of contaminants of concern (COCs) in soils at the Site present unacceptable risks for both direct contact and soil-to-groundwater pathways. In January 2012, EPA completed a Focused Feasibility Study (FFS) intended to identify alternatives for addressing threats presented by contamination outside the footprint of the buildings at the Site.

In December 2012, EPA Region 3 Issued a Record of Decision (ROD) announcing the selection of an interim remedial action for implementation at the Site. In the ROD, EPA identified two objectives for the interim cleanup action:

- Minimize contaminant migration to underground water from highly contaminated soils on the Site located outside the footprint of the buildings on the property.

- Reduce the risk to acceptable levels from direct contact with highly contaminated soils on the Site outside the footprint of the buildings on the property.

2. Site Location

The Chem-Fab facility is located at 300 through 360 North Broad Street in a mixed residential and commercial area of Doylestown Township, Bucks County, Pennsylvania. Doylestown Township comprises approximately 6,000 residences with a population of about 17,565 people. The approximate geographic coordinates of the center of the Site are 40.316° north latitude and -

75.135° west longitude. The Site includes the former Chem-Fab facility, a storage facility, the Doylestown Borough wastewater treatment facility, numerous residential properties, portions of an elementary school, and William E. Neis Park, as identified on Figure 1, Site Layout Map. The Site is bordered to the east by an operating business, to the south and west by an active garage storage facility and to the north by North Broad Street.

There are three buildings located at the former Chem-Fab Facility. Building A, a one-story building, is the largest on the property and is currently being used as a business complex. Building B, a two-story building, is currently used as a residential and commercial space. Building C is a converted three-story home that is used for residential and commercial purposes. The locations of the three buildings are shown on Figure 2, Building Identification Map.

B. EFFORTS TO NOTIFY AND COMPEL POTENTIALLY RESPONSIBLE PARTIES TO RESPOND

To date, U.S. EPA has not compelled the Potentially Responsible Parties (PRPs) to respond to the environmental problems associated with the Site.

III. ORGANIZATION OF THE RESPONSE

A. NAMES AND ADDRESSES

Agency	Contact	Brief Description of Duties
U.S. EPA Region 3 1650 Arch Street Philadelphia, PA 19103 (215) 814-3436	Eduardo Rovira (OSC)	OSC coordinated all site Removal activities.
(215) 814-3187	Huu Ngo (RPM)	RPM coordinated and continue to coordinate all Remedial activities for the Site.
Doylestown Township Water Authority (DTWA) 425 Wells Road Doylestown , PA 18901	Richard Jon (Executive Director)	DTWA will own the water line and is responsible for maintaining the water line once it is constructed by U.S. EPA.
CKS Engineers, Inc. 88 South Main Street Doylestown, PA 18901 (215) 340-0600	(b) (4) (Engineer)	Designed the water distribution system as a consultant to the DTWA.
Weston Solutions 1400 Weston Way West Chester, PA 19382 (610) 209-1807 (EPA Contractor)	(b) (4) (START Site Leads)	Superfund Technical Assessment and Response Team (START) representatives provided technical support to OSC, including groundwater sampling, photographic documentation, and construction oversight of water main and auxiliary facility

Agency	Contact	Brief Description of Duties
NorthStar Federal Services, Inc. 55 Progress Place, Unit 1 Jackson, NJ 08527 (509) 545-5404 (EPA Contractor)	(b) (4) (Response Manager)	Coordinated all site activities on behalf of emergency and rapid response services (ERRS) contractor
Passerini and Sons (a subcontractor to NorthStar) 52 Gruver Road Pipersville, PA 18947 (215) 766-0436	(b) (4)	Responsible for constructing the water main and providing connection from main to line stop and from the line stop to the house.
Roher Mechanical Services, Inc. 610-247-6636 276 East Valley Forge Road King of Prussia, PA 19406 (a subcontractor to WRS	(b) (4)	Constructed of the plumbing system inside the residential home.
LCF Construction (a subcontractor to NorthStar) PO Box 310 Hatfield, PA 19440 (215) 368-9373	(b) (4)	Responsible for constructing the line stop valve that connects to the water main.
WPB Enterprises, Inc. (subcontractor to NorthStar) 2844 Slifer Valley Road Riegelsville, PA 18077 (610) 346-8004	(b) (4)	Responsible for constructing the active soil depressurization system in the 300-330 North Broad Street building.

IV. CHRONOLOGICAL NARRATIVE OF REMOVAL ACTIONS

A. THREAT ABATEMENT ACTIONS

This response was conducted under the authority of CERCLA. The purpose of the Removal Action is to reduce the mass of contaminants in the source area to limit the potential for VI into nearby structures, and to limit migration of contaminants to groundwater.

On March 17, 2014, Weston Solutions, Inc. (WESTON®) and the Emergency and Rapid Response Services (ERRS) contractor, WRS (Compass) now NorthStar, mobilized to the Site. A temporary fence was placed along the southern perimeter of the Site and erosion and sediment control measures were installed. NorthStar began excavation of soil adjacent to the western corner of Building A and continued excavation in a counter clockwise direction around the south side of the building. After excavating an area, NorthStar backfilled the excavated section with clean fill and compacted the disturbed areas.

During the excavation, 11 concrete underground storage tanks (USTs) were uncovered in the south section of the Site as shown in Figure 3. WESTON collected samples from the material within the USTs prior to removal. The materials within the USTs were removed and placed in various storage containers and labeled and staged pending analysis. WESTON also collected

soil samples from areas surrounding the USTs and in the south section of the Site. These areas were excavated to approximately 12 to 14 feet below ground surface (bgs), and placed into 40-yard dumpsters or dump trucks pending analysis and shipped to appropriate off-site disposal facilities. From March through July 2014, approximately 2,440 tons of soil were excavated from areas surrounding Building A and were shipped off-site for disposal. The extent of the excavated areas is shown in Figure 3.

After excavations were complete, NorthStar backfilled, graded, and compacted the excavated areas to manage stormwater and to prepare for the area to be paved. Areas that were previously grass-covered were restored with a layer of sod along the south fenceline of Building A. A new chain-link fence was installed between the storage facility property and the Site. NorthStar planted 30 arborvitaes along the chain-link fence to replace the pre-existing bushes. The parking surfaces that were removed as a result of the soil excavation were replaced.

From August 24th through September 19th, Passerini and Sons, a subcontractor to NorthStar, connected a residence located down gradient from the Site to a public water supply. Passerini and Sons extended the water main located along North West Street in Doylestown, Pennsylvania, approximately 300 feet to the northwest. A line stop and a fire hydrant were installed and a lateral water line was connected to provide water service to a residence whose water well has been impacted by the Site. Another NorthStar subcontractor, Roher Mechanical Services, Inc., installed the indoor plumbing and connected the home to the lateral line. The lawn and any disturbed soil was revegetated and restored to its original condition.

On October 12, 2015, WPB Enterprises Incorporated installed a depressurization system inside Building A located at 300 North Broad Street. Eight suction fans and associated piping were strategically installed in and around the building foundation, based on the findings of the study performed to determine how air was moving beneath the building. The fans were wired by an electrical contractor, and then the system efficiency was fine tuned to obtain negative sub-slab pressure. A Magnehelic® differential pressure gauge was installed on each of the ventilation systems to monitor the operation of the ventilation fans. On November 21, 2015 a ninth suction fan was installed at space 330 due to readings taken after the first eight suction fans were installed. During the week of March 14, 2016 a tenth fan (with one suction hole at space 324 and one at space 328) was installed after evaluating the results of the air samples collected in earlier in the year.

On August 11, 2016 the OSC stopped by the site to check the depressurization system and noticed that five of the gauges were reading zero. After contacting the installer and checking the system, it was discovered that 4 of the fans had no power. After talking to the property owner, it was discovered that one of the tenants had moved out and the electricity to that space had been disconnected; therefore, the fans had stopped working. On October 12, 2016 the property owner had his electrician rewired the fans. To eliminate the possibility of the fans losing power due to tenants moving out and the electricity disconnected, during the week of December 11, 2016 an electric “house panel” was installed by EPA’s subcontractor and all the fans were rewired to that “house panel.”

B. TREATMENT, DISPOSAL, OR ALTERNATIVE TECHNOLOGY APPROACHES PURSUED

All materials, various waste streams, and debris removed from the Site were disposed of in appropriate Resource Conservation and Recovery Act (RCRA)-permitted disposal or treatment facility.

C. DISPOSAL METHODS AND QUANTITIES REMOVED

Table 1 provides detailed information regarding the materials that were disposed from the Chem Fab, Inc. Site. Actual manifests can be found in the Site file storage at the EPA Region III Central File Room, Philadelphia, Pennsylvania.

Table 1 – Disposal Methods and Quantities Removed

Waste Stream	Medium	Estimated Quantity	Manifest #
TCE Hazardous	Solid	126.43 Tons	012735789, 012735787, 012735782, 012735786, 012735783, 012735788, 012735784, 012735785, 012735791
Chrome and VOC Hazardous	Liquid	4 totes	01099076-1A, 01099076-1B, 01099076-1C, 01099076-1D
Chrome and VOC Hazardous	Solid	16 55-gallon drums 8 cubic yard boxes (9,192 pounds)	01099076-2, 01099076-3A, 01099076-3B, 01099076-3C, 01099076-3D, 01099076-3E, 01099076-3F, 01099076-3G, 01099076-3H
Chromium Hazardous	Solid	7.93 tons	007686208
Non-hazardous	Solid	2,300 Tons	Please refer to the site file, stored at EPA Region III Central File Room, Philadelphia, Pa.

Notes:
EPA = U.S. Environmental Protection Agency
TCE = trichloroethene
VOC = volatile organic compound

V. PUBLIC INFORMATION AND COMMUNITY RELATIONS ACTIVITIES

The Pollution Reports (POLREPs), site photographs, and other Administrative Record documents relating to the Site were made available to the public. They can be viewed at https://www.epaosc.org/chemfab or at the Administrative Record link on the sidebar of the U.S. EPA Region III Hazardous Site Cleanup Division Home page at https://www3.epa.gov. In addition, the Administrative Record can be examined at the following locations:

Administrative Records Room
US EPA Region III
1650 Arch Street
Philadelphia, P A 191 03

Bucks County Planning Commission
The Almshouse, Neshaminy Manor Center
1260 Almshouse Road
Doylestown, Pennsylvania 18901
(215) 345-3400
Email: bcnc@co.bucks.pa.us
AR303762

EPA issued a fact sheet summarizing the Agency's preferred remedial alternative for Operable Unit 1 (OU1) of the Site to residences and businesses near the Site in June 2012. EPA held a 30-day comment period from June 25 to July 25, 2012 to accept public comments on the remedial alternatives presented in the FFS, the Proposed Remedial Action Plan (PRAP), and the other documents contained within the Administrative Record for OU1 of the Site. On July 10, 2012, EPA held a public meeting to discuss the PRAP and accept comments. A transcript of this meeting is included in the OU1 Administrative Record. The summary of significant comments received during the public comment period and EPA's responses are included in the Responsiveness Summary, which is a part of the Record of Decision.

VI. RESOURCES COMMITTED

This section explains the initial and additional funding requests and presents an estimated total cost summary. Appendix B provides a copy of the funding request documents.

A. INITIAL FUNDING REQUEST

On November 8, 2012, using authority provided under EPA Delegation 14-2, the OSC authorized the expenditure of funds in an amount not to exceed $50,000 to initiate a removal action intended to reduce concentrations of VOCs in the indoor air of the suites inside building A located at 300-360 North Broad Street. To accomplish this, the OSC installed portable air purifiers into selected suites within the impacted building. The OSC subsequently collected additional data to evaluate the efficiency of the units combined with the existing building vapor mitigation system in reducing VOCs concentrations within the building.

B. ADDITIONAL FUNDING REQUEST

In January 2012, the Remedial Program completed a Focused Feasibility Study intended to evaluate alternatives to address threats presented by soils located at the Site. In December 2012, the Remedial Program issued a Record of Decision (ROD) selecting remedial action consisting of, among other things, the removal and off-site disposal of certain contaminated soils at the Site outside the footprint of the three buildings.

Based on the data collected (see Section III of the Original Action Memo), potential future conditions at the Site, the extent of contamination and other reasons (e.g., lack of Remedial and State funding to do the work), the OSC determined that continued Removal Action was necessary to mitigate or prevent a threat to public health and that a change of scope, additional funding, and an exemption to the 12-month limit were required to perform such action.

On September 19, 2013, EPA issued an Action Memorandum approving a scope change, the expenditure of additional funds, and an exemption to the statutory funding and time limits on the Removal Action. The selected Removal Action consisted primarily of the excavation and off-site disposal of certain contaminated soils presently located at the Site.

On May 28, 2014, a Change of Scope was approved to address the threat to public health from groundwater impacted by the contaminated soils on the Site. Hazardous substances in soils at the Site have been determined to be responsible for groundwater contamination that has impacted two residential water wells down gradient from the Site. Under this Change of Scope, bottled water was provided to one residence where such impacts are significant.

On January 20, 2015, EPA issued an Action Memorandum approving a scope change on the Removal Action ("Action Memo III"). This change of scope was to install a permanent connection to the affected residence to the Doylestown Township Municipal Authority water supply.

On September 30, 2015, a Change of Scope was approved to install a permanent depressurization system to reduce indoor TCE levels in Building A to levels that pose no unacceptable risk to the tenant's and their patrons.

C. ESTIMATED TOTAL COST SUMMARY

1. Extramural Costs (contractors)

Weston Solutions, Inc. (START)	$ 307,560
NorthStar (ERRS – including subcontracting)	$ 821,988

VII. EFFECTIVENESS OF REMOVAL ACTIONS

This section describes the activities of the various agencies, provides an analytical synopsis, and discusses disposal method used and quantities removed for the removal activity.

A. ACTIONS TAKEN BY POTENTIALLY RESPONSIBLE PARTIES

The Potentially Responsible Party for this Site was identified as Chem-Fab, Inc. Initial actions taken by Manfred DeRewel, Sr. and/or Fred DeRewel, Jr., representing Chem-Fab, Inc., included hiring a contractor to sample drums for future disposal. No further actions were conducted by the PRP, and no information regarding the chemicals stored at the Site was provided by the PRP. No other PRPs were identified.

B. ACTIONS TAKEN BY FEDERAL AGENCIES

The U.S. EPA Region III Superfund Removal Branch directed the management of this project. Eduardo Rovira, the OSC, directed all removal actions. OSC Eduardo directed the daily activities of WESTON and NorthStar. In addition, the OSC closely coordinated with other U.S. EPA personnel, Doylestown Township, local officials, and residents.

C. ACTIONS TAKEN BY STATE AND LOCAL AGENCIES

Doylestown Township and the Doylestown Township Municipal Authority (DTMA) assisted OSC Rovira with the construction of the water main in accordance with specifications set forth by DTMA.

D. ACTIONS TAKEN BY CONTRACTORS

WESTON provided technical support to the OSC under the START contract during removal activities. WESTON responsibilities included groundwater, indoor air, and soil sampling; comparing sampling results with state and EPA standards; preparing a trip report; overseeing removal activities and the construction of the water main; and documenting site activities through photographs and written notes.

NorthStar served as the main construction contractor under the EPA Region III ERRS contract. NorthStar responsibilities included removal activities, overseeing construction of water main by Passerini and Sons and construction of the residential plumbing by Roher Mechanical Services. Both contractors, Passerini and Sons and Roher Mechanical Services, acted as NorthStar subcontractors. NorthStar was also responsible for coordinating and scheduling site activities with respective residents, the community, and the Township of Doylestown.

VIII. DIFFICULTIES

Although site work was temporarily hindered due to minor set-backs, no significant problems were encountered throughout the course of this removal effort.

A. ITEMS THAT AFFECTED THE REMOVAL ACTION

During the soil excavation behind Building A, there was a lack of sufficient space to effectively move equipment, excavate, and stage contaminated soil. ERRS overcame this situation by excavating areas and backfilling the same areas with clean fill during the same day.

IX. GLOSSARY OF ABBREVIATIONS AND DEFINITIONS

bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
Cr^{6+}	Hexavalent Chromium
COC	contaminant of concern
DTMA	Doylestown Township Municipal Authority
EPA	U.S. Environmental Protection Agency
ERRS	Emergency and Rapid Response Service
FFS	Focused Feasibility Study
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OSC	On-Scene Coordinator
OU1	Operable Unit 1
PADEP	Pennsylvania Department of Environmental Protection
PCE	Tetrachloroethylene
POLREP	Pollution Report
PRAP	Proposed Remedial Action Plan
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
START	Superfund Technical Assessment and Response Team
TCE	Trichloroethene
U.S. EPA	U. S. Environmental Protection Agency
UST	underground storage tank

VOC	volatile organic compound
WESTON®	Weston Solutions, Inc.
WRS	WRS – now NorthStar (ERRS contractor)

APPENDICES

APPENDIX A
FIGURES

Legend

- Doylestown Borough wastewater treatment facility
- Former Chem-Fab facility
- Storage facility
- Approximate site boundary
- Stream

Data Sources:
Imagery - ESRI World Imagery webservice

Coordinate System:
Projection: UTM NAD83 Zone 18, feet
Datum: WGS 1984

N

0 1,000
1 in = 750 ft
Feet

Chem-Fab Removal
Doylestown, Bucks County, Pennsylvania

Figure 1
Site Layout Map

Date: 9/14/2016

WESTON SOLUTIONS

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Legend

Former Chem-Fab facility

Storage facility

Building A: Business complex
Building B: Residential and commercial use
Building C: Converted three-story home used for residential and commercial purposes

Data Sources:
Imagery - ESRI World Imagery webservice

Coordinate System:
Projection: UTM NAD83 Zone 18, feet
Datum: WGS 1984

1 in = 50 ft
0 50
Feet

Chem-Fab Removal
Doylestown, Bucks County, Pennsylvania

Figure 2
Building Identification Map

Date: 9/14/2016

WESTON SOLUTIONS

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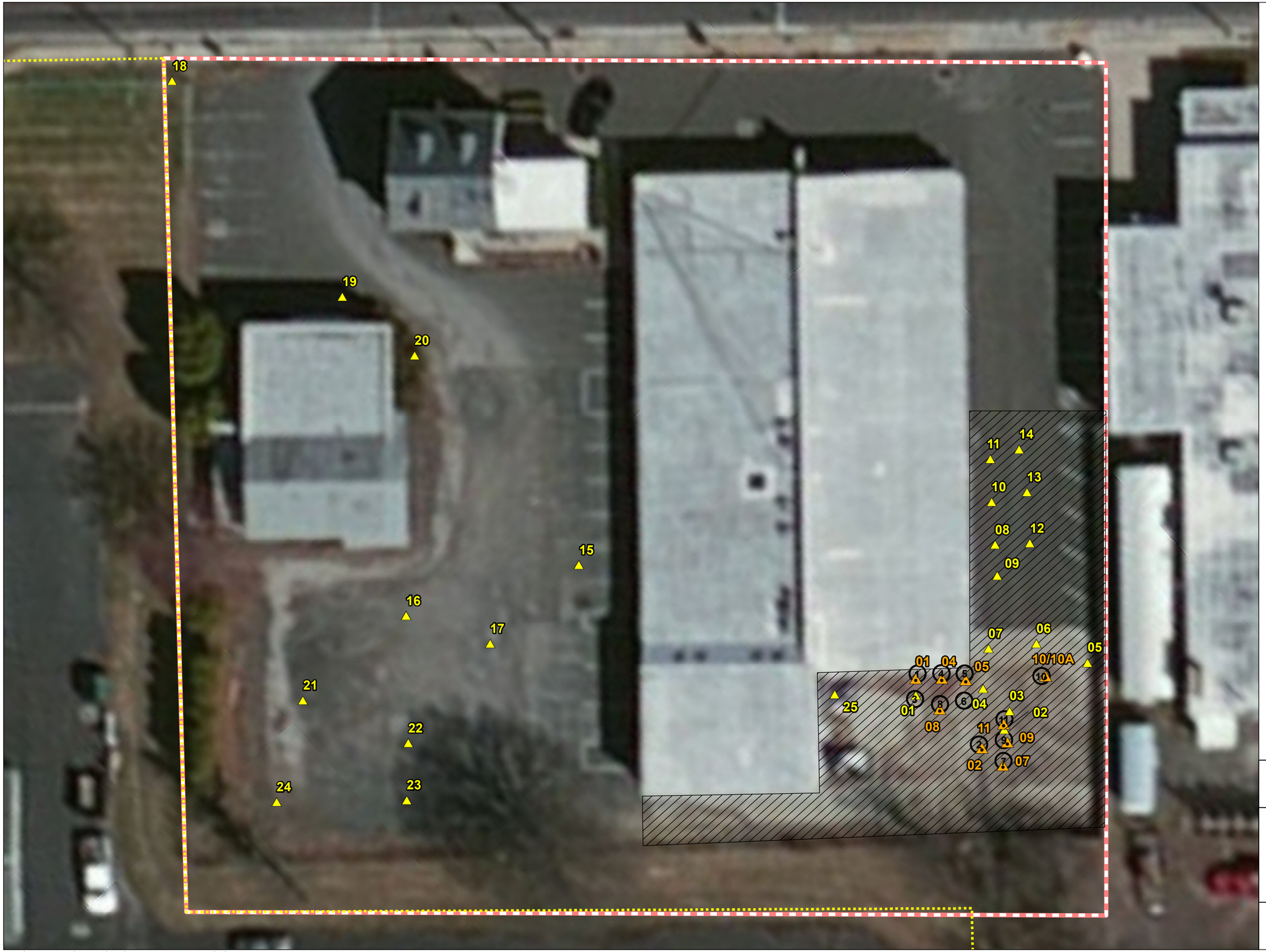

Legend

- Former Chem-Fab facility
- Storage facility
- Underground Storage Tank (UST)
- Soil Sample
- UST Sample
- Extent of Excavation Area

Data Sources:
Imagery - ESRI World Imagery

Coordinate System:
WGS84 UTM Zone 18N, feet

0 20 40
Feet

Chem-Fab Removal
Doylestown, Bucks County, Pennsylvania

Figure 3
UST, Excavation Area, and Sample Location Map

Date: 9/14/2016

WESTON SOLUTIONS

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APPENDIX B
FUNDING REQUEST DOCUMENTS

SPECIAL BULLETIN A

Chem-Fab NPL Site
Doylestown, Pennsylvania – Bucks County

November 8, 2012

ATTN: Ronald J. Borsellino, Director
Hazardous Site Clean-up Division (3HS00)

THRU: Dennis P. Carney, Associate Director
Preparedness and Response Office (3HS30)

THRU: Gerald T. Heston, Chief
Eastern Response Branch (3HS31)

FROM: Eduardo Rovira, Jr., OSC
Eastern Response Branch (3HS31) 11/8/12

I. Issue

Groundwater underlying the Chem-Fab facility and adjacent properties is contaminated with Trichloroethylene (TCE). TCE is a colorless liquid which is used as a solvent for cleaning metal parts. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death.

Sub-slab data from sampling events (October 2011 and January 2012) showed the presence of VOCs (mainly TCE) at high concentrations underneath two commercial office buildings (Building A and C, as described herein) at the Site. Indoor air data (October 2011, January and August 2012) showed concentrations of VOC at levels of concern in one of the buildings (Building A).

The release meets the criteria for conducting a removal action under Section 300.415 of the NCP. The OSC has determined that immediate funds are needed to mitigate the threat posed to human health and the environment. The OSC has authorized a ceiling for the removal action of $50,000, in accordance with EPA Delegation 14-2.

This Special Bulletin documents the scope of work needed to complete the removal action to protect public health and the environment.

II. Background

A. Site Description

The Chem-Fab Site is located at and around 300-360 North Broad Street in

Doylestown, Montgomery County, Pennsylvania. The Site includes 300-360 North Broad Street (the "Property") upon which industrial and disposal operations occurred in the past as well as other properties on which and to which contamination from such operations has migrated or otherwise come to be located. The Property currently contains a small office park hosting several commercial tenants in 3 separate buildings:

Building A: 300 – 330 North Broad Street (7 business tenants)
Building B: 340 North Broad Street (1 business tenant)
Building C: 350 – 360 North Broad Street (3 business tenants)

B. Site Background

From the mid-1960s to the early 1990s, Chem-Fab, Inc. (Chem-Fab) operated an electroplating and metal etching facility on the Property. Chem-Fab's operations generated wastes that included metals; volatile organic compounds (VOC) such as 1,1,1-trichloroethane ("1,1,1-TCA"), methylene chloride, and trichloroethylene ("TCE"); ferric chloride; mineral spirits; chromic acid rinse water and sludge; chromic acid; sulfuric acid; sodium bisulfate; and sodium hydroxide.

In the late 1970s, Chem-Fab was acquired by Boarhead Corporation, a business established by Manfred DeRewal, Sr. DeRewal also owned DeRewal Chemical Company Inc. (DCC), which removed, transported, and disposed of chemical waste generated by other companies. During the 1970s, liquid wastes, including hundreds of thousands of gallons of ammonia, hydrochloric acid, and pickle liquor waste, were transported from various industrial entities to the Property for disposal. In addition to Chem-Fab, two other entities associated with DeRewal – a gallium reclamation business and a computer assembly outfit – operated at the Property during the 1980s and 1990s, respectively. Chem-Fab owned the property through approximately May 1999.

In August 1987, EPA performed a Preliminary Assessment and Site Inspection (PA/SI) at the Doylestown Groundwater Site and the Chem-Fab Site. During the PA/SI, water samples from residential wells and the municipal well located in the vicinity of the Chem-Fab Site were found to contain elevated levels of VOC including TCE and tetrachloroethylene (PCE). In October 1987, EPA conducted a removal action which included the delivery of bottled water and carbon filtration units to affected residences and connection of affected residences to public water supplies.

In September 1994, EPA conducted a removal assessment at the Property. EPA found improperly and incompatibly stored drums of hazardous material, including flammable liquids and acids. Samples from these drums indicated the presence of acids, TCE, and chromium. A drum of radioactive thorium nitrate and containers of ammonia were also discovered. EPA also found a 50-foot underground storage tank (UST) which contained approximately 6,000 gallons of liquid and sludge and appeared to be leaking. Samples from the UST were found to contain hexavalent

chromium. Samples taken from a sump located inside the warehouse indicated the presence of TCE.

In 1994-1995, EPA conducted a second removal action at the Chem-Fab Site. During that response, EPA removed 117 drums and 8,400 gallons of liquid wastes, including chromium-contaminated wastes from the UST as well as other solid wastes and fuel oils.

In 1998, PADEP assumed the lead role in further assessing the Chem-Fab Site. Beginning in 1999, PADEP began an investigation of the soils and groundwater in the vicinity of the Site. PADEP found hexavalent chromium (Cr[VI]) and VOCs in the soils and in the groundwater on the Property and on an adjacent property. Visible chromium contamination was observed in the drainage ditch on the adjacent property. In 2004, PADEP issued a Statement of Decision selecting a groundwater remedy for the Site. However implementation of the remedy was delayed due to technical issues and lack of funding. PADEP continued its investigation and requested that EPA list the Site on the CERCLA National Priorities List (NPL).

EPA proposed the Chem- Fab Site for the NPL in September 2007. The Site was formally added to the NPL in March 2008. In September 2009, EPA initiated a fund-lead Remedial Investigation and Feasibility Study to comprehensively characterize the nature and extent of contamination at the Chem-Fab Site and to evaluate alternatives for addressing threats to human health and the environment presented by such contamination. EPA also conducted vapor intrusion (VI) sampling in the homes of residents living down-gradient from the Site, and conducted VI sampling in the commercial spaces at the Property.

C. Types of Substances Present

Sub-slab data showed the presence of VOC (mainly TCE) at high concentrations under Building A and Building C. Indoor air data showed concentrations of VOC at levels of concern at Building A, including the results of the August 2012 sampling event, which was conducted after the property owner turned on a vapor mitigation system. The data was provided to an EPA toxicologist for review. The EPA toxicologist calculated carcinogenic risks (CR) and non-carcinogenic hazard quotients (HQ) for each individual commercial space at the Property where sampling occurred. For several spaces within Building A the indoor air data showed an HQ at or exceeding 3 and/or a CR exceeding $1x10^{-04}$ based on at least one of the two data points. HQ and CR calculations for the sub-slab data points show similar risks for exposure to vapors detected below the building, which vapors could enter the building in the future.

On July 18, 2012, the Property owner turned on an existing vapor mitigation system. Three weeks after the system was turned on (August 8, 2012) EPA took

indoor air samples and found that VOC levels had not been significantly reduced in Building A, leased spaces 320, 324, 328 and 330.

Trichloroethylene (TCE) is a nonflammable, colorless liquid with a somewhat sweet odor and a sweet burning taste. It is used mainly as a solvent to remove grease from metal parts, but it is also an ingredient in adhesives, paint removers, typewriter correction fluids, and spot removers.

TCE is not thought to occur naturally in the environment. However, it has been found in underground water sources and many surface waters as a result of the manufacture, use, and disposal of the chemical.

When TCE enters the environment:

1. It dissolves a little in water, but it can remain in ground water for a long time.
2. It quickly evaporates from surface water, so it is commonly found as a vapor in the air.
3. It evaporates less easily from the soil than from surface water. It may stick to particles and remain for a long time.
4. It may stick to particles in water, which will cause it to eventually settle to the bottom sediment.
5. It does not build up significantly in plants and animals.

D. National Priorities List

EPA proposed the Chem-Fab Site for the NPL in September 2007. The Site was formally added to the NPL in March 2008.

E. State and Local Authorities Roles

The Commonwealth of Pennsylvania referred the Site to EPA because it had exhausted all of its funding resources to remediate the Site and the TCE ground water plume.

EPA continues to coordinate efforts with PADEP, and other Federal, State and local authorities regarding developments at the Site.

III. Threats to Public Health or Welfare or the Environment

Section 300.415 (b) (2) of the NCP, 40 C.F.R. § 300.415 (b) (2), identifies factors to be considered in determining the appropriateness of a removal action. Paragraphs (i),(iv) and (vii) of that section directly apply as follows to the conditions at the Chem-Fab Site:

- *300.415(b)(2)(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.*

VOCs, including TCE, have been released into groundwater at and near the Property. These VOCs have migrated from groundwater into indoor air at the Property. Sampling results showed concentrations of VOC (mainly TCE) in indoor air at levels of concern in Building A.

Breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death.

- *300.415(b)(2)(iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.*

VOCs, including TCE, have been released into groundwater at and near the Property. VOC vapor has migrated from groundwater into spaces beneath the foundation of buildings at the Property. Sampling results showed concentrations of VOC vapor at high concentrations underneath Buildings A and C. VOCs are migrating from beneath Building A into the air inside the building. VOCs are not presently migrating from beneath Building C into the air inside the building.

- *300.415(b)(2)(vii) The availability of other appropriate federal or state response mechanisms to respond to the release.*

PADEP has requested EPA assistance to provide technical expertise and financial resources in assessing and responding to the situation.

IV. Proposed Actions and Estimated Costs

A. Actions

1. Install and operate air purifiers (with carbon filters) in Building A, leased spaces 320, 324, 328 and 330.
2. Obtain additional air samples (indoor and sub-slab) from Building A in January 2013.
3. Continue to evaluate the existing mitigation system and the need for and scope of additional actions, as necessary, to minimize or prevent further migration of VOCs into the tenant spaces at the property.

B. Estimated Costs

	Ceiling
ERRS	$25,000
START	$15,000
Unallocated	$10,000
TOTAL	$50,000

C. Contribution to Remedial Performance

The proposed actions stated in Section IV above are appropriate and consistent with the anticipated Remedial Actions that may be taken at the Site.

D. Compliance with ARARS

The removal action will comply with all Applicable or Relevant and Appropriate Requirements (ARARs), to the extent practicable, considering the exigencies of the situation.

V. Expected Change in the Situation should No Action be Taken or Action Delayed

If no action is taken, or delayed, tenants of Building A will continue to be exposed to TCE at levels of concern.

VI. Outstanding Policy Issues

No outstanding policy issues.

VII. Enforcement

The OSC will coordinate with the Office of Enforcement regarding the possibility of enforcement-lead activities at the Site.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SEP 19 2013

SUBJECT: Approval of a request for approval of Additional Funds for a Removal Action, Approval for a $2 Million Exemption Request and Scope Change at the Chem-Fab Site in Doylestown Borough, Bucks County, Pennsylvania.

FROM: David P. Wright, Director
Hazardous Site Cleanup Division (3HS00)

TO: Mathy Stanislaus, Assistant Administrator
Office of Solid Waste and Emergency Response (5101T)

THRU: Lawrence Stanton, Director
Office of Emergency Management (5104 A)

ATTN: Gilberto Irizarry, Director
Program Operations and Coordination Division (5104 A)

ISSUE

The attached Memorandum is a "Request for Additional Funds for a Removal Action, Approval for a $2 Million Exemption Request and Scope Change ("Action Memo")" which documents the need for funding and approval to conduct and continue Removal Action to prevent or mitigate the threat posed by the release or substantial threat of release of hazardous substances, pollutants or contaminants at the Chem-Fab Site (the "Site") located in Doylestown Borough, Bucks County, Pennsylvania.

The action proposes to address the threat to public health from certain contaminated soils on property within the Site and which is located at 300 – 360 North Broad Street ("Property"). Hazardous substances in soils at the Property have been determined to be responsible for contaminant vapor intrusion ("VI") into a commercial building on the Property and groundwater contamination that has impacted a public supply well down gradient from the Property. The purpose of the Removal Action is to reduce the mass of contaminants in the source area to limit the potential for VI into additional nearby commercial structures, and limit migration of contaminants to groundwater (thereby limiting the impact on the public supply wells). To accomplish these goals, this Action Memo proposes to excavate and transport certain soils on the Property outside the footprint of the buildings at the Property for disposal at an off-site disposal location.

The Site is on the NPL and is currently the subject of an ongoing Remedial Investigation by the Remedial Program. In January 2012, the On–Scene Coordinator ("OSC") commenced a Removal Site evaluation pursuant to Section 300.410 of the National Contingency Plan ("NCP") which specifically focused on vapor intrusion into the commercial buildings on the Property. The data revealed the presence of VOCs (mainly TCE) at high concentrations in soils underneath two of the three commercial buildings at the Property, as well as high concentrations of VOCs at levels of concern in suites in one of the buildings.

On November 8, 2012, using authority provided under EPA Delegation 14-2, the OSC authorized the expenditure of CERCLA funding in an amount not to exceed $50,000 to initiate a Removal Action intended to reduce VOCs levels in the suites inside the impacted building. To accomplish this, the OSC installed portable air purifiers into selected suites within the impacted building. The OSC subsequently collected additional data to evaluate the efficacy of such units combined with the existing building vapor mitigation system in reducing VOCs levels within the building.

In January 2012 the Remedial Program completed a Focused Feasibility Study intended to evaluate alternatives to address threats presented by soils located at the Property. In December 2012, the Remedial Program issued a Record of Decision selecting remedial action consisting of, among other things, the removal and off-site disposal of certain contaminated soils on the Property outside the footprint of the three commercial buildings on the Property. EPA Remedial funding to commence this action has not been secured and may not be secured in the near term.

The proposed Removal Action consists of excavation and off-site disposal of certain soils outside of the footprint of the buildings at the property. As discussed below, the proposed Removal Action meets the criteria for the "consistency" exemption to the $2 million statutory limit for Removal Actions pursuant to Section 104(c)(1)(c) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9604(c)(1)(C).

I approved additional CERCLA funding in the amount of $2,688,000 as requested above the $50,000 already authorized by the OSC pursuant to Delegation of Authority 14-2. This funding will establish an estimated Removal Project Ceiling of $2,738,000, of which $2,100,000 is from the Regional Allowance. The funding is necessary to mitigate the threats identified in this Action Memo.

Attachment: Action Memo

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SEP 19 2013

SUBJECT: Request for Additional Funds for a Removal Action, Approval for a $2 Million Exemption Request and Scope Change at the Chem-Fab Site in Doylestown Borough, Bucks County, Pennsylvania.

FROM: Eduardo Rovira, Jr., On-Scene Coordinator
Eastern Response Branch (3HS31)

TO: David P. Wright, Acting Director
Office of Preparedness and Response (3HS30)

I. PURPOSE

The purpose of this "Request for Additional Funds for a Removal Action, Approval for a $2 Million Exemption Request and Scope Change ("Action Memo") is to document the need for funding and approval to conduct and continue Removal Action to prevent or mitigate the threat posed by the release or substantial threat of release of hazardous substances, pollutants or contaminants at the Chem-Fab Site (the "Site") located in Doylestown Borough, Bucks County, Pennsylvania.

This action is proposed to address the threat to public health from certain contaminated soils on property within the Site and which is located at 300 – 360 North Broad Street ("Property"). Hazardous substances in soils at the Property have been determined to be responsible for contaminant vapor intrusion ("VI") into a commercial building on the Property and groundwater contamination that has impacted a public supply well down gradient from the Property. The purpose of the Removal Action is to reduce the mass of contaminants in the source area to limit the potential for VI into additional nearby commercial structures, and limit migration of contaminants to groundwater (thereby limiting the impact on the public supply wells). To accomplish these goals, this Action Memo proposes to excavate and transport certain soils on the Property outside the footprint of the buildings at the Property for disposal at an off-site disposal location.

The Site is on the NPL and is currently the subject of an ongoing Remedial Investigation by the Remedial Program. In January 2012, the On–Scene Coordinator ("OSC") commenced a Removal Site evaluation pursuant to Section 300.410 of the National Contingency Plan ("NCP") which specifically focused on vapor intrusion into the commercial buildings on the Property. The data revealed the presence of VOCs (mainly TCE) at high concentrations in soils underneath two of the three commercial buildings at the Property, as well as high concentrations of VOCs at levels of concern in suites in one of the buildings.

On November 8, 2012, using authority provided under EPA Delegation 14-2, the OSC authorized the expenditure of CERCLA funding in an amount not to exceed $50,000 to initiate a Removal Action intended to reduce VOCs levels in the suites inside the impacted building. To accomplish this, the OSC installed portable air purifiers into selected suites within the impacted building. The OSC subsequently collected additional data to evaluate the efficacy of such units combined with the existing building vapor mitigation system in reducing VOCs levels within the building.

In January 2012 the Remedial Program completed a Focused Feasibility Study intended to evaluate alternatives to address threats presented by soils located at the Property. In December 2012, the Remedial Program issued a Record of Decision selecting remedial action consisting of, among other things, the removal and off-site disposal of certain contaminated soils on the Property outside the footprint of the three commercial buildings on the Property. EPA Remedial funding to commence this action has not been secured and may not be secured in the near term.

Based on the data collected (see Section III), potential future conditions at the Site, the extent of contamination and other reasons (e.g., lack of Remedial and State funding to do the work), the OSC determines that continued Removal Action is necessary to mitigate or prevent a threat to public health and that a change of scope, additional funding, and an exemption to the 12-month limit are required to perform such action.

The proposed Removal Action consists of excavation and off-site disposal of certain soils outside of the footprint of the buildings at the property. As discussed below, the proposed Removal Action meets the criteria for the "consistency" exemption to the $2 million statutory limit for Removal Actions pursuant to Section 104(c)(1)(c) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9604(c)(1)(C).

Additional CERCLA funding in the amount of $2,688,000 is requested above the $50,000 already authorized by the OSC pursuant to Delegation of Authority 14-2. This funding will establish an estimated Removal Project Ceiling of $2,738,000, of which $2,100,000 is from the Regional Allowance. The funding is necessary to mitigate the threats identified in this Action Memo.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Physical Location/Site Characteristics

The Chem-Fab Site is located at and around 300 – 360 North Broad Street in Doylestown, Montgomery County, Pennsylvania. The Site is located approximately 0.6 miles from the center of Doylestown and is surrounded by a mixture of commercial, industrial and residential areas. The closest school is

approximately 0.5 miles to the southwest. The Site includes 300 – 360 North Broad Street (the "Property"), upon which industrial and disposal operations occurred in the past, as well as other properties on which and to which contamination from such operations has migrated or otherwise come to be located. The Property currently contains a small office park hosting several commercial tenants in 3 separate buildings identified on Attachment A as follows:

Building A: 300 – 330 North Broad Street
Building B: 340 North Broad Street
Building C: 350 – 360 North Broad Street

The areal extent of the Chem-Fab Site will be further delineated in the ongoing Remedial Investigation.

2. Site Background

From the mid–1960s to the early 1990s, Chem-Fab, Inc. ("Chem-Fab") operated an electroplating and metal etching facility on the Property. Chem-Fab's operations generated wastes that included metals, volatile organic compounds (VOCs) such as 1,1,1-trichloroethane ("1,1,1-TCA"), methylene chloride, trichloroethylene ("TCE"), ferric chloride, mineral spirits, chromic acid rinse water and sludge, chromic acid, sulfuric acid, sodium bisulfate, and sodium hydroxide.

In the late 1970s, Chem-Fab was acquired by Boarhead Corporation, a business established by Manfred DeRewal, Sr. DeRewal also owned DeRewal Chemical Company Inc. ("DCC"), which removed, transported, and disposed of chemical waste generated by other companies. During the 1970s, liquid wastes, including hundreds of thousands of gallons of ammonia, hydrochloric acid, and pickle liquor waste, were reportedly transported from various industrial entities to the Property for disposal. In addition to Chem-Fab, two other entities associated with DeRewal (a gallium reclamation business and a computer assembly outfit) operated at the Property during the 1980s and 1990s, respectively. Chem-Fab owned the property through approximately May 1999.

In August 1987, EPA performed a Preliminary Assessment and Site Inspection (PA/SI) at the Doylestown Groundwater Site and the Chem-Fab Site. During the PA/SI, water samples from residential wells and the municipal well located in the vicinity of the Chem-Fab Site were found to contain elevated levels of VOCs including TCE and tetrachloroethylene ("PCE"). In October 1987, EPA conducted a Removal Action which included the delivery of bottled water and carbon filtration units to affected residences and connection of affected residences to public water supplies.

In September 1994, EPA conducted a Removal Assessment at the Property. EPA found improperly and incompatibly stored drums of hazardous material, including flammable liquids and acids. Samples from these drums indicated the presence of acids, TCE, and chromium. A drum of radioactive thorium nitrate and containers of ammonia were also discovered. EPA also found a 50-foot underground storage tank (UST) which contained approximately 6,000 gallons of liquid and sludge, which appeared to be leaking. Samples from the UST were found to contain hexavalent chromium. Samples taken from a sump located inside the warehouse indicated the presence of TCE.

In 1994 – 1995, EPA conducted a second Removal Action at the Chem-Fab Site. During that response, EPA removed 117 drums and 8,400 gallons of liquid wastes, including chromium-contaminated wastes from the UST as well as other solid wastes and fuel oils.

In 1998, PADEP assumed the lead role in further assessing the Chem-Fab Site. Beginning in 1999, PADEP began an investigation of the soils and groundwater in the vicinity of the Site. PADEP found hexavalent chromium (Cr[VI]) and VOCs in the soils and in the groundwater on the Property and on an adjacent property. Visible chromium contamination was observed in the drainage ditch on the adjacent property. In 2004, PADEP issued a Statement of Decision selecting a groundwater remedy for the Site. However implementation of the remedy was delayed due to technical issues and lack of funding. PADEP continued its investigation and requested that EPA list the Site on the NPL.

In September 2009, EPA commenced a Remedial Investigation at the Site, which is still ongoing. Concurrently with that study, EPA conducted VI sampling in the homes of residents living down gradient from the Site and conducted VI sampling in the commercial spaces at the Property in October 2011, January 2012, August 2012 and January 2013.

In January 2012, the Remedial Program completed a Focused Feasibility Study intended to identify alternatives to address threats to human health presented by certain contaminated soils at the Property. In December 2012, the Remedial Program issued a Record of Decision selecting remedial action consisting of, among other things, excavation and off-site disposal of certain soils at the Property outside the footprint of the buildings at the Property.

3. Quantities and Types of Substances Present

Contaminants in the soil and groundwater at the Site appear to be related to historical operations and disposal that occurred at the Property. Soil at the Property has been found to be contaminated with a number of inorganics, VOCs and semi-volatile organic compounds ("SVOCs"). The contaminants with the most significant levels include hexavalent chromium ("Cr[VI]"), PCE, and TCE.

Cr[VI], PCE, and TCE were found at concentrations up to 781 mg/kg, 190 mg/kg, and 4,000 mg/kg, respectively. The area of highest soil contamination roughly corresponds to the area where an above-ground tank farm was previously located. The former Chem-Fab facility had up to six above-ground storage tanks as well as a 10,000 gallon underground storage tank. Drums of waste were also found in this area during the 1994 EPA removal action. EPA found label information on drums and other containers indicating the presence of xylene, toluene, hydrochloric acid, sulfuric acid, nitric acid, caustic soda, methyl isobutyl ketone, polymeric isocyanate, benzenesulfonic acid, nickel rinse waste, methylene chloride, ferric chloride, chromate waste acid, and anhydrous ammonia.

Groundwater at the Site contains many of the constituents found in soil at the Property including, Cr[VI], PCE, TCE, and chemicals associated with the degradation of PCE and TCE, among other contaminants. The presence of the same contamination in the groundwater as the soil suggests that the two are linked and that the groundwater contamination is likely a result of infiltration of soil contamination into the water table below. The groundwater contamination extends from the Property in a southwest direction beneath the adjacent self-storage facility and into neighboring properties in Doylestown Township. The groundwater contamination also flows slightly westward in the direction of Cooks Run, a tributary of the Neshaminy Creek. Site-related contamination has appeared in Doylestown Municipal Water Authority Well ("MWAW") #13, located less than a quarter mile southwest of the Property and in Doylestown MWAW #8 which is located approximately a half mile to the southwest of the Property. Doylestown MWAW #13 was shut down in 2001 to help prevent further spread of the contamination. Doylestown MWAW #8 has shown levels of contamination and continues to be monitored.

VOCs, including PCE, TCE and their breakdown products have been detected in sub-slab samples taken below two of the three commercial buildings at the Property and in indoor air samples taken in one of the buildings. In vapor intrusion samples collected in October 2011, TCE was detected as high as 12,600 ppbv in the sub-slab and 41.2 ppbv in the indoor air.

Sub-slab data showed high concentrations of VOCs (mainly TCE) under Building A and Building C. Indoor air data showed concentrations of VOCs at levels of concern in Building A, including the results of the August 2012 sampling event, which was conducted after the property owner turned on an existing vapor mitigation system. An EPA toxicologist reviewed the data and calculated carcinogenic risks (CR) and non-carcinogenic hazard quotients (HQ) for each individual commercial space at the Property where sampling occurred. For several spaces within Building A, the indoor air data showed an HQ at or exceeding 3 and/or a CR exceeding $1x10^{-04}$ based on at least one of the two data points. HQ and CR calculations for the sub-slab data points show similar risks for

exposure to vapors detected below the building, which vapors could enter the building in the future.

TCE is a nonflammable, colorless liquid with a somewhat sweet odor and a sweet burning taste. It is used mainly as a solvent to remove grease from metal parts, but it is also an ingredient in adhesives, paint removers, typewriter correction fluids, and spot removers. TCE is not thought to occur naturally in the environment. However, it has been found in underground water sources and many surface waters as a result of the manufacture, use, and disposal of the chemical.

When TCE enters the environment:

1. It dissolves a little in water, but it can remain in ground water for a long time.
2. It quickly evaporates from surface water, so it is commonly found as a vapor in the air.
3. It evaporates less easily from the soil than from surface water. It may stick to particles and remain for a long time.
4. It may stick to particles in water, which will cause it to eventually settle to the bottom sediment.
5. It does not build up significantly in plants and animals.

3. National Priorities List

EPA proposed the Chem-Fab Site for the NPL in September 2007. The Site was formally added to the NPL in March 2008.

In September 2009, EPA initiated a fund-lead Remedial Investigation and Feasibility Study to comprehensively characterize the nature and extent of contamination at the Chem-Fab Site and to evaluate alternatives for addressing threats to human health and the environment presented by such contamination. In January 2012, EPA completed a Focused Feasibility Study intended to identify alternatives for addressing threats presented by contamination outside the footprint of the buildings at the Property. In December 2012, EPA selected remedial action that included, among other things, excavation and off-site disposal of much of this soil.

4. State and Local Authorities' Roles

EPA continues to coordinate efforts with PADEP, and other federal, state and local authorities regarding developments at the Site. State resources are not currently available to fund the response action.

B. Actions to Date

1. Previous Actions

In addition to the actions mentioned in Section II.A.2 above, the Removal Program conducted the following actions:

a. October 2011 and January 2012: sub-slab and indoor air sampling in all three building on the Property. Results showed unacceptable levels of VOCs in the indoor air of Building A and high levels of VOCs under Buildings A and C.
b. Requested the property owner to turn on an existing vapor mitigation system along the back of Building A. The system was turned on in July 2012.
c. August 2012: indoor air sampling in Building A. Results showed unacceptable levels of VOCs in the indoor air of half of Building A (320 North Broad Street side), even after the Property owner turned on the existing vapor mitigation system. Installed portable air units in the 320 North Broad Street side of Building A.
d. January 2013: sub-slab and indoor air sampling in Building A. Results showed acceptable levels of VOCs in the indoor air of Building A and still high levels of VOCs under Building A.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Section 300.415 of the NCP lists the factors to be considered in determining the appropriateness of a Removal Action. At this time, the following sections apply:

§ 300.415 (b)(2)(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

Results from the October 2011, January 2012 and August 2012 showed unacceptable VOCs levels in the indoor air of Building A and high levels of VOCs in the sub-slab of two out of the three buildings on the Property.

While the combined effect of the existing vapor mitigation system and the air purifiers currently reduces the VOCs levels vapors to acceptable levels within Building A on the Property, the air purifiers are a temporary measure and the mitigation system alone, as currently configured, is incapable of such reduction. In addition, changes in soil gas migration pathways, normal deterioration of the building(s) over time, changes in interior layout, and the reduced efficacy of the temporary units may collectively, over time, lead to unacceptable exposures to VOCs within the commercial building on the Property.

§ 300.415 (b)(2)(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems.

The drinking water supply for Doylestown has been contaminated by chemicals leaching from the soil (from the Site) to groundwater. Fluctuations in the water table have allowed contamination in the subsurface soils to migrate to groundwater. The removal of portions of the asphalt cover (parking area) by the Property owner has the potential to allow greater infiltration into the soil and thus increase the mobilization of contaminants and migration of contamination into the groundwater.

§ 300.415(b)(2)(iii) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.

Historical information about the Site indicates that a 1,000 gallon underground catch basin may still exist at the rear of the Property. This area contains the highest levels of soil contamination at the Site. The Property owner has indicated that this catch basin has been compromised and may pose a threat of release. Fluctuations in the water table have allowed subsurface soil contamination to migrate to groundwater. The removal of portions of the asphalt surface will allow greater infiltration of precipitation and has the potential to release additional contamination from this catch basin to the groundwater.

§ 300.415(b)(2)(iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.

High levels of contamination have been found at the Property as shallow as 1 – 2 feet below ground surface. The removal of portions of the asphalt surface has increased the potential for these contaminants to migrate downward into the groundwater as a result of precipitation and laterally as a result of wind or other weather events.

VOCs, including TCE, have been released into groundwater at and near the Property. VOC vapor has migrated from groundwater into spaces beneath the foundation of buildings at the Property. Sampling results showed concentrations of VOCs vapor at high concentrations underneath Buildings A and C. VOCs are migrating from beneath Building A into the air inside the building. VOCs are not presently migrating from beneath Building C into the air inside the building.

§ 300.415(b)(2)(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

Heavy rainfall and/or wind may mobilize soil contamination in the areas where the asphalt surface has been removed and increase the potential that workers and the public are exposed to contaminants via direct contact. In addition, heavy rainfall would also raise the water table and facilitate migration that way.

§ 300.415 (b)(2)(vii) The availability of other appropriate federal or state response mechanisms to respond to the release.

PADEP does not currently have the resources to undertake response actions at the Site and has requested that EPA take the lead on mitigating the threats present onsite. Although the Site is on the NPL and a Remedial Action that would abate the threats identified herein has been selected by EPA, the Remedial Program is not in a position to implement the Remedial Action in a timely manner. There are no other federal or state response mechanisms currently available to expeditiously perform the actions necessary to mitigate the threats to public health and the environment presented by the release or threatened release of hazardous substances at the Site as described herein.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances and/or pollutants or contaminants from this Site, if not addressed by implementing the Removal Action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, and/or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

Section 104(c)(1) of CERCLA provides generally that the President may obligate the expenditure of CERCLA funds for Removal Actions for longer than one year, or in an amount greater than $2 million, only in certain identified situations, one of which is where "continued response action is otherwise appropriate and consistent with the remedial action to be taken." 42 U.S.C. § 9604(c)(1)(C).

EPA's June 12, 1989 "Final Guidance on Implementation of the 'Consistency' Exemption to the Statutory Limits on Removal Actions" (Guidance) sets forth criteria for using the exemption. The criteria are satisfied in this case as follows:

a. Consistency: The proposed Removal Action does not foreclose the remedial action. The proposed Removal Action is actually identical in part to the Remedial Action selected by EPA in December 2012. The Guidance notes that:

> The 'remedial action to be taken' is the remedial action that, prior to the start of the removal action, was planned or could reasonably have been expected to be taken. Certainly, the actual performance of the activities that are part of a planned or expected remedial action are consistent with that action. It may turn out that after a removal done under a 'consistency' exemption, the Agency will decide not to take any further response action."

b. Appropriateness: The proposed Removal Action is "appropriate" within the meaning of the guidance because it meets the following criteria:

The proposed Removal Action will be taken to avoid threats presented by contaminated soil currently located on the Property. The threats include VI at the buildings on the Property; the potential of contact threat from the soils exposed where the asphalt was removed; and the potential of increased contamination load on groundwater.

The proposed Removal Action will reduce the scope of future cleanup and the potential for harm to human health and the environment. The contaminated soils that will be addressed in this Removal Action will not need to be addressed again in future remedial actions because they will have been removed from the Site. As such, the scope of future Remedial Actions regarding the groundwater will be decreased as the source of a significant contributor to the groundwater contamination at the Site will have been removed.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Background

In December 2012, EPA Region 3 issued a Record of Decision (ROD) announcing the selection of an interim remedial action for implementation at the Site. In the ROD, EPA identified two objectives for the interim cleanup action:

- Minimize contaminant migration to groundwater from highly contaminated soils on the Property located outside the footprint of the buildings on the Property.
- Reduce the risk to acceptable levels from direct contact with highly contaminated soils on the Property outside the footprint of the buildings on the Property.

To determine specific areas where excavation and removal of soils would occur to meet these objectives, the Remedial Program engaged a multi-step approach that generally involved the following:

Identification of Contaminants of Concern

- Data showing contamination in soils was evaluated against the EPA Region 3 Regional Screening Level Table (June 2011) to identify substances at levels exceeding 1x10-6 or a Hazard Index of 0.1 using the "residential direct contact" and "soil to groundwater exposure" scenarios.
- Each contaminant found at such levels was determined to be Contaminants of Concern (COC). The COCs are identified in Attachment B.

Migration of Contamination From Soil to Groundwater

- For each (COC), EPA calculated a soil concentration above which Site conditions would potentially yield a release to groundwater above the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act (this was referred to as the "MCL-based SSRG"). The MCL-based SSRG for each COC is identified in Attachment C. Soils containing COCs above the MCL-based SSRG concentration would be remediated.
- EPA further calculated for each COC a soil concentration above which Site conditions would potentially yield a release to groundwater above the more stringent Region 3 Tap Water Screening Levels (this was referred to as the TW-based SSRG"). The TW-based SSRG for each COC is identified in Attachment C. Soils not containing COCs above the TW-based SSRG would not be excavated since they would not present unacceptable risks nor result in any MCL exceedance.
- As for soils containing COCs at levels above the TW-based SSRG but below the MCL-based SSRG, a risk evaluation was performed to determine if a release of COCs from such soils into groundwater would result in an unacceptable level of risk (for carcinogens, total risk from all COCs greater than $1x10^{-4}$; for non-carcinogens, a Hazard Index greater than 1).

Contact Threats

- Soils containing COCs below the Region 3 Screening Levels (RSLs) for residential direct contact would not be remediated as they do not present unacceptable risks. The RSLs for each COC are identified in Attachment C.
- For soils containing contaminants above levels above the RSLs, a risk evaluation was conducted to determine if direct contact with such soils would result in an unacceptable level of risk (as described above). Soils presenting unacceptable risk would be excavated.

The Remedial Program modified the above-described determinations to rule out cleanup of COCs below background concentrations. For each sample location outside the building footprints, the COC concentrations were compared with the MCL-based SSRG, TW-based SSRG, direct contact RSL, and background level to make a cleanup determination. The parameters for the cleanup decision were summarized in a matrix (Table 3 of the ROD) as follows:

COC concentration in soil	**Action to be taken**
Greater than or equal to MCL-SSRG	Cleanup
Less than MCL-SSRG (or no MCL-SSRG exists), but greater than or equal to TW-SSRG or Direct Contact RSL	Conduct risk evaluation If TR>1E-04 or HI>1, remediate.
Less than both TW-SSRG and Direct Contact RSL	No action
Less than Background	No action

Application of the matrix to the sample data facilitated the identification of the areas to be cleaned up. These areas were identified in Figure 5 of the ROD.

The OSC has reviewed and considered the cleanup objectives articulated in the December 2012 ROD, relevant sampling data, the methodology used in the ROD to identify the COCs, the identification of COCs, the methodology used to identify locations where excavation would be necessary to achieve the cleanup objectives, and the conclusions reached by the Remedial Program regarding cleanup at each location identified in Table 5 of the ROD. The OSC concurs with all of the above and concludes that the proposed actions below are appropriate to abate, prevent, minimize, stabilize, mitigate, and/or eliminate the threat to public health or welfare or to the environment presented by the release and/or threatened release of hazardous substances at the Site:

B. Proposed Action Description

1. Mobilize necessary personnel, supplies and equipment to the Site.
2. Provide security to limit access to working areas.
3. Construct walkways, as needed, to permit safe parking and access to the businesses on the Property by employers, employees, patrons, and the public during the response.
4. Except as described in (5) below, excavate soil at the Property located in the "Soil Source Areas" identified in Attachment D hereto which:
   a. contains one or more COCs at levels which equal or exceed the MCL-based SSRG;
   b. contain one or more COCs at levels which, though less than the MCL-based SSRG but greater than or equal to the TW-based SSRG, present carcinogenic risk greater than $1x10^{-4}$ or a Hazard Index of greater than 1.
5. Soil adjacent to structures at the Property which triggers the excavation standards in item #4, above, will be excavated only if such excavation is possible without compromising the integrity of the structure.
6. Implement dust suppression and air monitoring to minimize exposure to airborne contaminants by employers, employees, and patrons of the business park and the public.
7. Perform confirmation sampling to ensure that all soils to be excavated in accordance with item #4, above, have been excavated.
8. Conduct TCLP or equivalent testing to determine if excavated soils contain RCRA hazardous waste.
9. Dispose of excavated soils containing no hazardous waste at an off-site RCRA Subtitle D (solid waste) facility in accordance with Section 121(d)(3) of CERCLA and 40 C.F.R. § 300.440 ; dispose of excavated soil containing hazardous waste at an off-Site Subtitle C (hazardous waste) facility in accordance with Section 121(d)(3) of CERCLA and 40 C.F.R. § 300.440.
10. Backfill excavations with clean fill and reinstall parking surfaces.
11. Demobilize personnel and equipment from the Site.

C. Contribution to Remedial Performance

The proposed Removal Action will facilitate planned and probable future remedial actions. In December 2012, EPA selected Remedial Action which included the excavation and off-site disposal of the soils that are the subject of the proposed Removal Action (see VI.A, above). The Remedial Program is expected to select additional Remedial Action to address, among other things, groundwater contamination following completion of the RI/FS for the Site. Implementation of the proposed Removal Action will reduce the scope of remedial action to be performed in the future by (1) eliminating the need to perform much of the work selected in the December 2012 ROD and (2) reducing the ongoing contaminant loading on groundwater which may slow the expansion of a contaminant plume.

D. Compliance with Applicable or Relevant and Appropriate Requirements ("ARARs")

The Removal Action will attain applicable or relevant and appropriate requirements (ARARs) to the extent practicable given the exigencies of the situation. In December 2012, EPA issued a ROD selecting Remedial Action that included excavation of the soils to be excavated in the proposed Removal Action. ARARs for the Remedial Action were identified in Table 5 of the ROD. On August 8, 2013, the OSC asked PADEP to identify any additional or different ARARs for the proposed Removal Action by September 30, 2013. The ARARs identified in the ROD are attached hereto as Attachment E.

E. Project Schedule

The OSC estimates that approximately twelve months will be required to complete the field activities outlined in Section VI.A above.

F. Estimated Costs

The proposed distribution of funding is as follows:

	Present Ceiling	Proposed Ceiling	Total
Extramural Costs Regional Removal Allowance Costs Total Cleanup ERRS Contractor Costs (This cost category includes estimates for ERRS, subcontractors, Notices to Proceed, and IAGs with other Federal Agencies.		$2,100,000	$2,100,000

Extramural Costs Not Funded from the Regional Allowance Total START, including multiplier costs		$140,000	$140,000
Subtotal Extramural Costs		$2,240,000	$2,240,000
Extramural Costs Contingency (20% of Subtotal, Extramural Costs; round to nearest thousand)		$448,000	$448,000
OSC authorized ceiling (EPA Delegation 14-2)	$50,000	$2,688 ,000	$2,738,000
TOTAL REMOVAL ACTION PROJECT CEILING			$2,738,000

VII. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the proposed actions at the Site are not implemented or are delayed, the threat of a release of hazardous substances, pollutants, or contaminants will continue. This release could result in exposure to the public.

As explained above, high levels of contamination have been found at the Property as shallow as 1 – 2 feet below ground surface. The removal of portions of the asphalt surface has increased the potential for these contaminants to migrate downward into the groundwater, which might end up impacting the drinking water wells down gradient of the site, as a result of precipitation and laterally as a result of wind or other weather events.

VOC vapor has migrated from groundwater into spaces beneath the foundation of buildings at the Property. Sampling results showed concentrations of VOCs vapor at high concentrations underneath Buildings A and C. VOCs are migrating from beneath Building A into the air inside the building. VOCs are not presently migrating from beneath Building C into the air inside the building.

VIII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues pertaining to the Site.

IX. ENFORCEMENT

See attached Enforcement Confidential Addendum.

X. COSTS

The total EPA costs for this removal action, based upon full-cost accounting practices that will be eligible for cost recovery, are estimated below as follows[1]:

Direct Extramural Costs:	$2,738,000
Direct Intramural Costs:	$164,280
Total Direct Costs	$2,902,280
Indirect Costs	$2,085,810
Estimated EPA Costs for the Removal Action	$4,988,090

X. RECOMMENDATION

This Action Memorandum represents the selected Removal Action for the Chem-Fab Site in Doylestown Borough, Bucks County, Pennsylvania, developed in accordance with CERCLA, as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

By signing this Action Memorandum, you are also hereby establishing the documents listed below as the Administrative Record supporting the issuance of this Action Memorandum, pursuant to Section 113 (k) of CERCLA and EPA Delegation No. 14-22.

1. VI sampling documentation
2. Focused Feasibility Study, EPA 2012
3. Record of Decision, Operable Unit 1, Chem-Fab Superfund Site , EPA 2012
4. Administrative Record supporting issuance of Record of Decision, Operable Unit 1, Chem-Fab Superfund Site, EPA 2012.

Because conditions at the Chem-Fab Site meet the Removal Action requirements of Section 300.415 of the NCP, 40 C.F.R. § 300.415, I recommend your approval of the proposed Removal Action. The total Removal Action Project Ceiling, if approved, will be $2,738,000. Of this, an estimated $2,100,00 comes from the Regional Removal Allowance. Please indicate your approval or disapproval below.

---

[1]Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use in not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

Action by the Approving Official:

I have reviewed the above-stated facts and based upon those facts and the information compiled in the documents described above, I hereby determine that the release or threatened release of hazardous substances at and/or from the Site presents or may present an imminent and substantial endangerment to the public health or welfare or to the environment. I concur with the recommended removal action as outlined and establish the documents identified above as the administrative record supporting selection of this action.

APPROVED: _____ **DATE:** 9/19/13

David P. Wright, Associate Director
Office Preparedness and Response
EPA Region 3

DISAPPROVED: _____ **DATE:** _____

David P. Wright, Associate Director
Office Preparedness and Response
EPA Region 3

Attachments:

A. Site Figure
B. Contaminants of Concern
C. Region III Screening Levels
D. Soil Source Areas
E. ARARs Identified in ROD

Attachment A

Chem Fab Site
Doylestown Township,
Bucks County, Pennsylvania

Legend

- Approximate Boundary Extra Space Storage Facility
- Approximate Boundary Former Chem Fab Facility

0 300 600
Feet

Aerial Photo Source: ESRI World Imagery

Figure 1 – Property Boundaries and Surrounding Areas

Attachment B

Table 2: Soil Cleanup Decision Parameters

Contaminant (Metal)	Soil to Groundwater		Direct Contact RSL	Background	Units
	MCL-SSRG	TW-SSRG			
Aluminum		291000	7700	20502	mg/kg
Antimony	1260	314	3.1	1.5	mg/kg
Arsenic	20.6	0.0925	0.39	6.55	mg/kg
Barium	4320	1580	1500	395	mg/kg
Cadmium	19.7	7.1	7	1.4	mg/kg
Chromium [VI]	101	0.0433	0.29		mg/kg
Cobalt		0.589	2.3	21.5	mg/kg
Copper	1720	198	310	15.7	mg/kg
Iron		30000	5500	36700	mg/kg
Lead	212		40	43.2	mg/kg
Manganese		301	180	2630	mg/kg
Mercury	5.48	0.156	0.56	0.108	mg/kg
Nickel		250	150	34.5	mg/kg
Selenium	145	52.1	39		mg/kg
Silver		85.1	39		mg/kg
Thallium	7.47	0.138	0.078	0.628	mg/kg
Vanadium		944	39	57.8	mg/kg
Zinc		3590	2300		mg/kg
Contaminant (VOC)	**Soil to Groundwater**		**Direct Contact RSL**	**Background**	**Units**
	MCL-SSRG	**TW-SSRG**			
Acetone		26	6100		mg/kg
Benzene	0.156	0.0128	1.1		mg/kg
Chloroform	1.28	0.00305	0.29		mg/kg
Chloromethane (methyl chloride)		0.268	12		mg/kg
Dichlorobenzene, 1,2-	37.1	2.29	190		mg/kg
Dichloroethane, 1,1-		0.039	3.3		mg/kg
Dichloroethene, 1,2-		0.565	70		mg/kg
Dichloroethene, cis-1,2-	1.2	0.125	16		mg/kg
Dichloromethane (methylene chloride)	0.0734	0.0705	11		mg/kg
Ethylbenzene	49.5	0.106	5.4		mg/kg
Hexanone, 2-		0.06034	21		mg/kg
Methyl tertyl-butyl ether		0.157	43		mg/kg
Tetrachloroethene	0.129	0.00283	0.55		mg/kg
Toluene	42.8	9.85	5000		mg/kg
Trichloroethane, 1,1,1-	3.79	17.3	870		mg/kg
Trichloroethene	0.102	0.0409	2.8		mg/kg
Vinyl Chloride	0.0341	0.000273	0.06		mg/kg
Xylene, m,p-	622	1.24	63		mg/kg
Contaminant (SVOC)	**Soil to Groundwater**		**Direct Contact RSL**	**Background**	**Units**
	MCL-SSRG	**TW-SSRG**			
Benzo[a]anthracene		0.673	0.15		mg/kg
Benzo[a]pyrene	15.4	0.223	0.015		mg/kg
Benzo[a]fluoranthene		2.28	0.15		mg/kg
Benzyl butyl phthalate		33.2	260		mg/kg
Bis(2-ethylhexyl) phthalate	94.1	75.3	35		mg/kg
Dimethylphenol, 2,4-		5.54	120		mg/kg
Methylnapthalene, 2-		50.4	310		mg/kg
Napthalene		0.0299	3.6		mg/kg
Nitrosodiphenylamine, n-		4.99	99		mg/kg
Trichlorobenzene, 1,2,4-	13.3	0.435	22		mg/kg

EPA Regional Screening Level (RSL) Table June 2011 used
MCL-SSRG = Maximum Contaminant Level-based Site Specific Remedial Goal
TW-SSRG = Tap Water Risk Screening Level-based Site Specific Remedial Goal
Direct Contact RSL corresponds to TR=1E-06 or HI=0.1
Background values only exist for Metals

Attachment C

Table 1: Chemicals Exceeding EPA Regional Screening Levels (RSLs) in Soil

Contaminant (Metal)	Maximum Detection	Residential Direct Contact		Soil to Groundwater		Units
		TR=1E-06	HI=0.1	TR=1E-06	HI=0.1	
Aluminum	31100		**7700**		**5500**	mg/kg
Antimony	44.2		**3.1**		**0.066**	mg/kg
Arsenic	35.9	**0.39**	**2.2**	**0.0013**		mg/kg
Barium	914		1500		**30**	mg/kg
Cadmium	2.17	1800	7		**0.14**	mg/kg
Chromium (VI)	781	**0.29**	**23**	**0.00083**		mg/kg
Cobalt	109	370	**2.3**		**0.049**	mg/kg
Copper	196		310		**5.1**	mg/kg
Iron	58200		**5500**		**64**	mg/kg
Lead	521		**40**		**1.4**	
Manganese	4030		**180**		**5.7**	mg/kg
Mercury	0.6		1		**0.0033**	mg/kg
Nickel	271	13000	**150**		**4.8**	mg/kg
Selenium	1.74		39		**0.095**	mg/kg
Silver	1.43		39		**0.16**	mg/kg
Thallium	1.2		**0.078**		**0.0026**	mg/kg
Vanadium	66.7		**39**		**18**	mg/kg
Zinc	294		2300		**68**	mg/kg
Contaminant (VOC)	**Maximum Detection**	**Residential Direct Contact**		**Soil to Groundwater**		**Units**
		TR=1E-06	**HI=0.1**	**TR=1E-06**	**HI=0.1**	
Acetone	1.7		6100		**0.45**	
Benzene	0.042	1.1	8.6	**0.00021**		mg/kg
Chloroform	0.009	0.29	21	**0.000053**		mg/kg
Chloromethane (methyl chloride)	0.132		12		**0.0049**	mg/kg
Dichlorobenzene, 1,2-	0.58		190		**0.036**	mg/kg
Dichloroethane, 1,1-	0.002	3.3	1600	**0.00069**		mg/kg
Dichloroethene, 1,1-	0.008		24		**0.012**	mg/kg
Dichloroethene, 1,2-	7.2		70		**0.0097**	mg/kg
Dichloroethene, cis-1,2-	6.06		16		**0.0021**	mg/kg
Dichloromethane (methylene chloride)	0.752	11	170	**0.0012**		mg/kg
Ethylbenzene	41	**5.4**	350	**0.0017**		mg/kg
Hexanone, 2-	0.67		21		**0.0011**	mg/kg
Methyl tert-butyl ether	0.007	43	1700	**0.0028**		mg/kg
Tetrachloroethene (PCE)	190	**0.55**	**37**	**0.000049**		mg/kg
Toluene	20		500	**1.6**		mg/kg
Trichloroethane, 1,1,1-	11		870		**0.32**	mg/kg
Trichloroethylene (TCE)	4000	**2.8**	**2.5**	**0.00072**		mg/kg
Vinyl Chloride	0.23	**0.06**	7.4	**0.0000056**		mg/kg
Xylene, m,p-	130		**63**		**0.02**	mg/kg
Contaminant (SVOC)	**Max. Detect**	**Residential Direct Contact**		**Soil to Groundwater**		**Units**
		TR=1E-06	**HI=0.1**	**TR=1E-06**	**HI=0.1**	
Benzo[a]anthracene	0.187	**0.15**		**0.01**		mg/kg
Benzo[a]pyrene	0.148	**0.015**		**0.035**		mg/kg
Benzo[b]fluoranthene	0.121	0.15		**0.035**		mg/kg
Benzyl butyl phthalate	0.612	260	1200	**0.51**		mg/kg
Bis(2-ethylhexyl) phthalate	2.53	35	12	**1.1**		mg/kg
Dimethylphenol, 2,4-	0.4		120		**0.086**	mg/kg
Methylnapthalene, 2-	2.66		31		**0.075**	mg/kg
Napthalene	8.3	**3.6**	14	**0.00047**		mg/kg
Nitrosodiphenylamine, n-	0.131	99		**0.075**		mg/kg
Trichlorobenzene, 1,2,4-	0.099	22	6.2	**0.0068**		mg/kg

EPA Regional Screening Level (RSL) Table June 2011 used
TR= Carcinogenic Target Risk
HI= Noncancer Hazard Index
BOLD VALUES denote an exceedance of the RSL

Attachment D

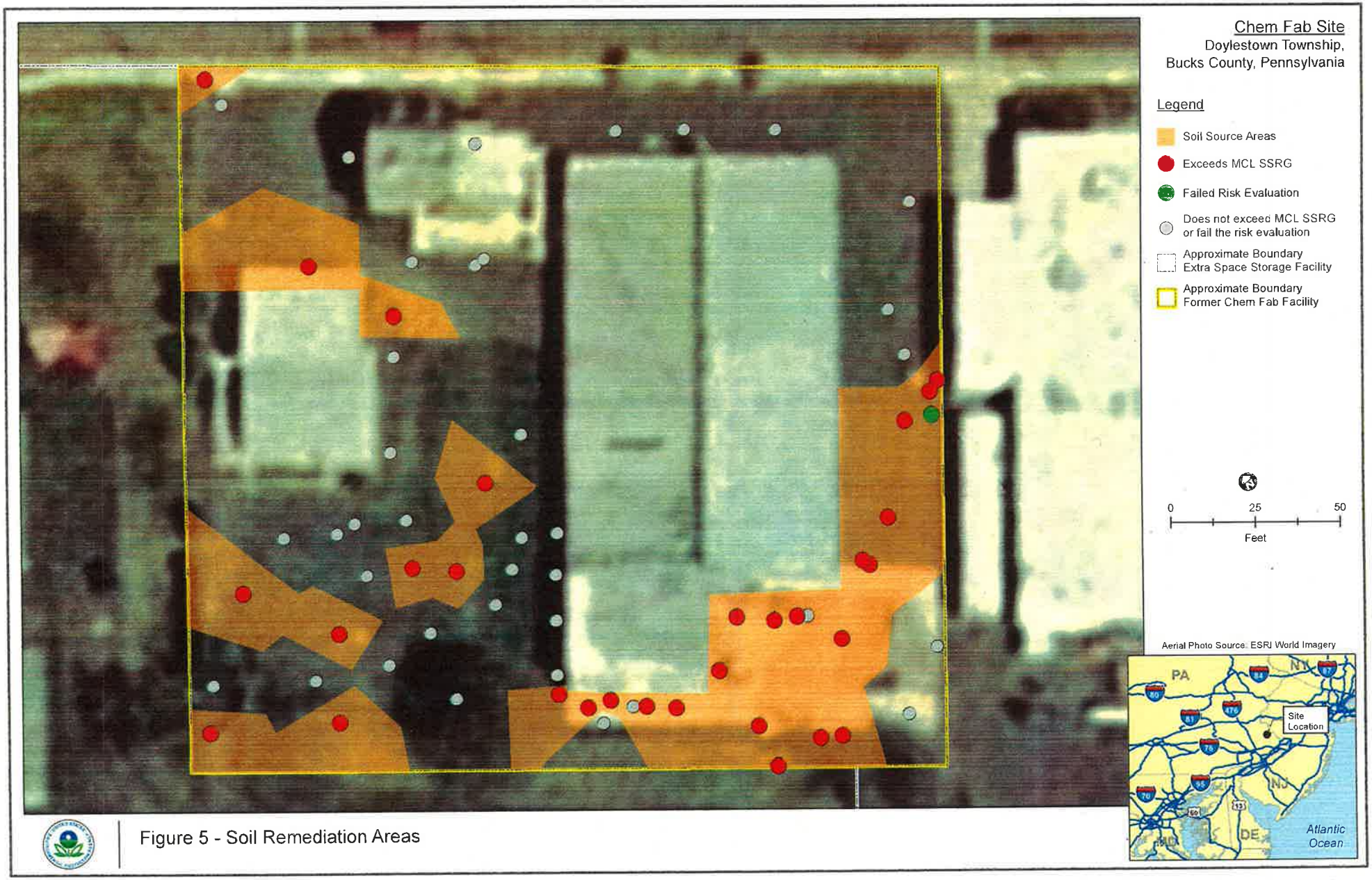

Figure 5 - Soil Remediation Areas

Table 5
Summary of Applicable or Relevant and Appropriate Requirements (ARARs)
Chem Fab Superfund Site
Operable Unit 01

Attachment E

ARAR	LEGAL CITATION	CLASSIFICATION	SUMMARY OF REQUIREMENT	FURTHER DETAIL REGARDING ARARS IN THE CONTEXT OF THE REMEDY
Erosion and Sediment Control	25 PA Code 102.4(b)(1) and (4), 102.11, 102.22	Applicable	Identifies erosion and sediment control requirements and criteria for activities involving land clearing, grading and other earth disturbances and establishes erosion and sediment control criteria.	The substantive requirements of these regulations apply to construction activities at the site which disturb the ground surface, including clearing, grading, excavation and cap installation.
Identification of Hazardous Wastes	40 CFR § 261.20-24 25 Pa Code § 261a.1	Applicable	Defines and describes process for identifying hazardous wastes based on toxicity characteristic	With respect to each of these provisions, the Commonwealth provision is a Federal ARAR if the provision is part of the Commonwealth's authorized program. The Commonwealth provision is a State ARAR if the provision is more stringent than the Federal provision (within the meaning of CERCLA) or if the Commonwealth provision is beyond the scope of the Federal provision. Otherwise, the Federal provision is a Federal ARAR.
Standards applicable to Generators of Hazardous Wastes	40 CFR § 262.10(a), (h) and 262.11(c)(1) 25 Pa Code § 262a.10 and 11	Applicable	These regulations establish standards for generators of hazardous wastes, including initiating shipments and determination of hazard characteristics. Activities at the site will meet the substantive requirements of these regulations.	
Standards applicable to Generators of Hazardous Wastes	40 C.F.R. § 262.34 25 Pa Code § 262a.34	Applicable	Establishes requirements for temporary storage of hazardous wastes on-site. Any storage of hazardous substances excavated at the site will meet the substantive requirements of these regulations.	
Fugitive Air Emissions	25 PA Code 123.1 – 123.2	Applicable	Establishes the fugitive dust regulation for particulate matter.	The excavation and any other construction activities will comply with these regulations.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SUBJECT: Request for a Scope Change for the Removal Action at the Chem-Fab Site in Doylestown Borough, Bucks County, Pennsylvania.

FROM: Eduardo Rovira, Jr., On-Scene Coordinator
Eastern Response Branch (3HS31)

TO: David P. Wright, Director
Office of Preparedness and Response (3HS30)

I. PURPOSE

The purpose of this "Request for a Scope Change" ("Change of Scope") is to document the need for a change of scope for a previously selected Removal Action to prevent or mitigate the threat posed by the release or substantial threat of release of hazardous substances, pollutants or contaminants at the Chem-Fab Site (the "Site") located in Doylestown Borough, Bucks County, Pennsylvania.

On November 8, 2012, using authority provided under EPA Delegation 14-2, the On-Scene Coordinator ("OSC") authorized the expenditure of funds in an amount not to exceed $50,000 to initiate a removal action intended to reduce VOCs in suites inside an office building located 300-360 North Broad Street ("Property"), which Property is included within the Site. To accomplish this, the OSC installed portable air purifiers into selected suites within the impacted building. The OSC subsequently collected additional data to evaluate the efficacy of such units combined with the existing building vapor mitigation system in reducing VOCs levels within the building.

In January 2012, the Remedial Program completed a Focused Feasibility Study intended to evaluate alternatives to address threats presented by soils located at the Property. In December 2012, the Remedial Program issued a Record of Decision (ROD) selecting remedial action consisting of, among other things, the removal and off-site disposal of certain contaminated soils on the Property outside the footprint of the three commercial buildings on the Property.

Based on the data collected (see Section III of the Original Action Memo), potential future conditions at the Site, the extent of contamination and other reasons (e.g., lack of Remedial and State funding to do the work), the OSC determined that continued Removal Action was necessary to mitigate or prevent a threat to public health and that a change of scope, additional funding, and an exemption to the 12-month limit were required to perform such action.

On September 19, 2013, EPA issued an Action Memorandum approving a scope change, the expenditure of additional funds, and an exemption to the statutory funding and time limits on the Removal Action. The selected Removal Action consisted primarily of the excavation and off-site disposal of certain contaminated soils presently located at the Property.

This Change of Scope proposes to additionally address the threat to public health from groundwater impacted by the contaminated soils on the Property. Hazardous substances in soils at the Property have been determined to be responsible for contaminant vapor intrusion ("VI") into a commercial building on the Property and for groundwater contamination that has impacted two private supply wells down gradient from the Property. Under this Change of Scope, bottled water will be provided to one private property where such impacts are significant. The need to connect such property to public water will be decided in the near future; however, based on the results of the sampling, there is an immediate need to provide the occupants of this property with bottled water.

The Site is on the NPL and is currently the subject of an ongoing Remedial Investigation by the Remedial Program.

At this time there is no need for additional CERCLA funding. This Action Memorandum incorporates and supplements the previous Action Memorandum, signed by the Associate Director of the Office of Preparedness and Response on September 19, 2013. Where information is unchanged from the previous documents, the reader is referred to that document.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Physical Location/Site Characteristics

Please refer to attached September 2013 Action Memorandum.

2. Site Background

Please refer to attached September 2013 Action Memorandum.

3. Quantities and Types of Substances Present

On November 21, 2013, the EPA Region 3 Remedial Program collected samples from private wells on properties located along the path of the suspected groundwater plume (on North West Street). Site-related contamination was found, at levels of concern, in one such well.

Such well was resampled on January 6, 2014. During this sampling event, groundwater from the well had exceedances of the MCL for TCE. The charts below shows the levels of Site-related contaminants found in the well.

Groundwater Contaminant Levels at the Residential Property

November 21, 2013:

COC	Result (ug/L)
Cis-1,2-Dichloroethene	0.53
Tetrachloroethene	2.2
Trichloroethene	3.7

January 6, 2014:

COC	Result (ug/L)
Cis-1,2-Dichloroethene	1.2
Tetrachloroethene	3
Trichloroethene	21

Underlined value indicates exceedance of EPA MCL.

For additional information, please refer to attached September 2013 Action Memorandum.

4. National Priorities List

Please refer to attached September 2013 Action Memorandum.

5. State and Local Authorities' Roles

The OSC communicated with the Pennsylvania Department of Environmental Protection (PADEP) and the state does not have the resources to provide bottled water to the affected parties at this time.

For additional information, please refer to the attached September 2013 Action Memorandum.

B. Actions to Date

1. Previous Actions

Please refer to attached September 2013 Action Memorandum.

2. Current Actions

The current Removal Action consists of excavation and off-site disposal of certain soils outside of the footprint of the buildings at the property.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

As explained in Section II.A.3, above, site-related contamination has been detected in groundwater samples from a private residential well located within a mile of the Site. The contamination in the well exceeds EPA's MCL for TCE. After reviewing the data, EPA has determined that this level presents an unacceptable level of risk to the occupants at the residential property. At this point, the unacceptable risk is associated solely with drinking the water. Direct contact and inhalation risks (e.g., showering) will be calculated again when more data points are obtained from future sampling.

For additional information, please refer to attached September 2013 Action Memorandum.

IV. ENDANGERMENT DETERMINATION

Please refer to attached September 2013 Action Memorandum.

V. EXEMPTION FROM STATUTORY LIMITS

Please refer to attached September 2013 Action Memorandum.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Action Description

EPA will be providing bottled drinking water for the occupants at the residential property. It is anticipated the water will be provided for a duration of up to six months; at that time, a decision to extend the provision of bottled water will be made. Additional sampling from the wells located along the suspected path of the groundwater plume will be conducted. Once the results are back, the option/need to provide bottled water to additional properties and/or to connect the impacted properties to public water will be examined and determined.

B. Contribution to Remedial Performance

Please refer to attached September 2013 Action Memorandum.

C. Applicable or Relevant and Appropriate Requirements ("ARARs")

Please refer to attached September 2013 Action Memorandum.

D. Project Schedule

See Section VI.A, above.

E. Estimated Costs

Based on the number of affected properties, the anticipated length of time bottled water will be provided, the on-going actions at the Site and current Removal Action Project Ceiling, the need for additional funding is not required at this time.

Once the option/need of providing additional bottled water and/or connecting affected parties to public water is examined and determined, then the need for additional funding for these actions will be determined.

VII. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the proposed action is not implemented or is delayed, the people drinking the water from the well at the residential property will continue to be exposed to the unacceptable risk from the ingestion of TCE.

For additional information, please refer to attached September 2013 Action Memorandum.

VIII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues pertaining to the Site.

IX. ENFORCEMENT

Please refer to attached September 2013 Action Memorandum.

X. COSTS

See Section VI.E, above.

For additional information, please refer to attached September 2013 Action Memorandum.

XI. RECOMMENDATION

This Action Memorandum represents a Change of Scope to the selected Removal Action for the Chem-Fab Site in Doylestown Borough, Bucks County, Pennsylvania, developed in accordance with CERCLA, as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

By signing this Action Memorandum, you are also hereby adding the document listed below to the Administrative Record supporting the issuance of this Action Memorandum

and this Scope Change, pursuant to Section 113(k) of CERCLA and EPA Delegation No. 14-22:

1. Water sample results from affected wells, collected on 11/21/13 and 01/06/14.

Because conditions at the Chem-Fab Site meet the Removal Action requirements of Section 300.415 of the NCP, 40 C.F.R. § 300.415, I recommend your approval of the proposed Scope Change. The total Removal Action Project Ceiling, if approved, will remain at $2,738,000. Of this, an estimated $2,100,00 comes from the Regional Removal Allowance. Please indicate your approval or disapproval below.

Action by the Approving Official:

I have reviewed the above-stated facts and based upon those facts and the information compiled in the documents described above, I hereby determine that the release or threatened release of hazardous substances at and/or from the Site presents or may present an imminent and substantial endangerment to the public health or welfare or to the environment. I concur with the recommended removal action as outlined and establish the document identified above as an addition to the administrative record supporting selection of the Removal Action as modified herein.

APPROVED: _____ **DATE:** 5/28/14

David P. Wright, Associate Director
Office Preparedness and Response
EPA Region 3

DISAPPROVED: _____ **DATE:** _____

David P. Wright, Associate Director
Office Preparedness and Response
EPA Region 3

Attachments:
A. Original Action Memo

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SUBJECT: Request for a Scope Change to Continue the Removal Action at the Chem-Fab Site in Doylestown Borough, Bucks County, Pennsylvania.

FROM: Eduardo Rovira, Jr., On-Scene Coordinator
Eastern Response Branch (3HS31)

TO: David P. Wright, Acting Director
Office of Preparedness and Response (3HS30)

012015

I. PURPOSE

The purpose of this "Request for a Scope Change to Continue the Removal Action ("Change of Scope")" is to document the need for a change of scope for a previously selected Removal Action to prevent or mitigate the threat posed by the release or substantial threat of release of hazardous substances, pollutants or contaminants at the Chem-Fab Site (the "Site") located in Doylestown Borough, Bucks County, Pennsylvania.

On November 8, 2012, using authority provided under EPA Delegation 14-2, the OSC authorized the expenditure of funds in an amount not to exceed $50,000 to initiate a Removal Action intended to reduce VOCs in suites inside an office building located on 300 – 600 North Broad Street ("Property"), which Property is included within the Site. To accomplish this, the OSC installed portable air purifiers into selected suites within the impacted building. The OSC subsequently collected additional data to evaluate the efficacy of such units combined with the existing building vapor mitigation system in reducing VOCs levels within the building.

In January 2012 the Remedial Program completed a Focused Feasibility Study intended to evaluate alternatives to address threats presented by soils located at the Property. In December 2012, the Remedial Program issued a Record of Decision (ROD) selecting a remedial action consisting of, among other things, the removal and off-site disposal of certain contaminated soils on the Property outside the footprint of the three commercial buildings on the Property.

Based on the data collected (see Section III of attached Action Memoranda), potential future conditions at the Site, the extent of contamination and other reasons (e.g., lack of Remedial and State funding to do the work), the OSC determined that continued Removal Action was necessary to mitigate or prevent a threat to public health and that a change of scope, additional funding, and an exemption to the 12-month limit were required to perform such action.

On September 19, 2013, EPA issued an Action Memorandum approving a scope change, the expenditure of additional funds, and an exemption to the statutory funding and time limits on the Removal Action ("Action Memo"). The selected Removal Action consisted primarily of the excavation and off-site disposal of certain contaminated soils presently located at the Property.

On May 28, 2014, EPA issued an Action Memorandum approving a scope change on the Removal Action ("Action Memo II"). This change of scope was to provide bottled water to the residence affected by contaminated groundwater impacted by the contaminated soils on the Property. Hazardous substances in soils at the Property were determined to be responsible for contaminant vapor intrusion ("VI") into a commercial building on the Property and groundwater contamination that has impacted two private supply wells down gradient from the Property.

This Change of Scope proposes to connect to public water the residence where such impacts, as described above, are significant.

The Site is on the NPL and is currently the subject of an ongoing Remedial Investigation by the Remedial Program.

At this time, the need for additional CERCLA funding is not needed. This Action Memorandum incorporates and supplements the previous Action Memoranda. Where information is unchanged from the previous documents, the reader is referred to that/those document(s).

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Physical Location/Site Characteristics

Please refer to attached September 2013 Action Memorandum. The location of the property to be connected to the public water supply is not disclosed to protect privacy interests.

2. Site Background

Please refer to attached September 2013 Action Memorandum.

3. Quantities and Types of Substances Present

EPA Region 3 Remedial/Removal Program have collected samples from the private well on three different occasions (11/13, 01/14 and 06/14) and have found site-related contamination each time, two of them (including the most recent)

above the MCL for TCE. Most of the occupants fall within a sensitive group population based on age.

TCE Levels at the Residential Property

Date	Result (µg/L)
November 21, 2013	3.7
January 6, 2014	21
June 9, 2014	6.2

Underlined value indicates exceedance of EPA MCL (5 µg/L).

For additional information, please refer to attached Action Memoranda.

4. National Priorities List

Please refer to attached September 2013 Action Memorandum.

5. State and Local Authorities' Roles

The OSC communicated with the Pennsylvania Department of Environmental Protection (PADEP) and the state does not have the resources to connect the affected party to public water at this time.

For more information, please refer to attached Action Memoranda.

B. Actions to Date

1. Previous Actions

Please refer to attached Action Memoranda.

2. Current Actions

A Removal Action, which consisted of excavation and off-site disposal of certain soils outside of the footprint of the buildings at the property, as included in the ROD, was conducted during the spring/summer 2014.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Please refer to attached Action Memoranda.

IV. ENDANGERMENT DETERMINATION

Please refer to attached September 2013 Action Memorandum.

V. EXEMPTION FROM STATUTORY LIMITS

Please refer to attached September 2013 Action Memorandum.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Action Description

Install a permanent connection to the affected residence from the Doylestown Township Municipal Authority water supply.

B. Contribution to Remedial Performance

Please refer to attached September 2013 Action Memorandum.

C. Applicable or Relevant and Appropriate Requirements ("ARARs")

Please refer to attached September 2013 Action Memorandum.

D. Project Schedule

The affected residence would be connected to public water as soon as practicable.

E. Estimated Costs

The cost of connecting the affected residence to the Doylestown Township Municipal Authority water supply is estimated not to exceed $50,000. There is currently enough money in the Removal Action Project Ceiling to continue to provide water to the affected property owner until it is connected to public water and to connect it to public water.

VII. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Please refer to attached September 2013 Action Memorandum.

VIII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues pertaining to the Site.

IX. ENFORCEMENT

Please refer to attached September 2013 Action Memorandum.

X. COSTS

See Section VI.E above.

For additional information, please refer to attached Action Memoranda.

XI. RECOMMENDATION

This Action Memorandum represents a Change of Scope of the selected Removal Action for the Chem-Fab Site in Doylestown Borough, Bucks County, Pennsylvania, developed in accordance with CERCLA, as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

By signing this Action Memorandum, you are also hereby establishing the documents listed below as the Administrative Record supporting the issuance of this Action Memorandum, pursuant to Section 113 (k) of CERCLA and EPA Delegation No. 14-22. The document listed below is to be added to the existing Administrative Record, established when the September 19, 2013 Action Memo was signed.

1. Water sample results from affected well, collected on 06/09/14.

Because conditions at the Chem-Fab Site meet the Removal Action requirements of Section 300.415 of the NCP, 40 C.F.R. § 300.415, I recommend your approval of the proposed Removal Action. The total Removal Action Project Ceiling, if approved, will remain at $2,738,000. Of this, an estimated $2,100,00 comes from the Regional Removal Allowance. Please indicate your approval or disapproval below.

Action by the Approving Official:

I have reviewed the above-stated facts and based upon those facts and the information compiled in the documents described above, I hereby determine that the release or threatened release of hazardous substances at and/or from the Site presents or may present an imminent and substantial endangerment to the public health or welfare or to the environment. I concur with the recommended removal action as outlined and establish the documents identified above as the administrative record supporting selection of this action.

APPROVED: _____ **DATE:** 1/20/15

David P. Wright, Associate Director
Office Preparedness and Response
EPA Region 3

DISAPPROVED: _____ **DATE:** _____

David P. Wright, Associate Director
Office Preparedness and Response
EPA Region 3

Attachments:

A. September 19, 2013 Action Memorandum
B. May 28, 2014 Action Memorandum

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SUBJECT: Request for a Scope Change to Continue the Removal Action at the Chem-Fab Site in Doylestown Borough, Bucks County, Pennsylvania.

FROM: Eduardo Rovira, Jr., On-Scene Coordinator
Eastern Response Branch (3HS31)

TO: Bonnie G. Gross, Associate Director
Office of Preparedness and Response (3HS30)

I. PURPOSE

The purpose of this "Request for a Scope Change to Continue the Removal Action ("Change of Scope")" is to document the need for a change of scope for a previously selected Removal Action to prevent or mitigate the threat posed by the release or substantial threat of release of hazardous substances, pollutants or contaminants at the Chem-Fab Site (the "Site") located in Doylestown Borough, Bucks County, Pennsylvania.

On November 8, 2012, using authority provided under EPA Delegation 14-2, the OSC authorized the expenditure of funds in an amount not to exceed $50,000 to initiate a Removal Action intended to reduce VOCs in suites inside an office building located on 300 – 600 North Broad Street ("Property"), which Property is included within the Site. To accomplish this, the OSC installed portable air purifiers into selected suites within the impacted building. The OSC subsequently collected additional data to evaluate the efficacy of such units combined with the existing building vapor mitigation system in reducing VOCs levels within the building.

In January 2012 the Remedial Program completed a Focused Feasibility Study intended to evaluate alternatives to address threats presented by soils located at the Property. In December 2012, the Remedial Program issued a Record of Decision (ROD) selecting a remedial action consisting of, among other things, the removal and off-site disposal of certain contaminated soils on the Property outside the footprint of the three commercial buildings on the Property.

Based on the data collected (see Section III of attached Action Memoranda), potential future conditions at the Site, the extent of contamination and other reasons (e.g., lack of Remedial and State funding to do the work), the OSC determined that continued Removal Action was necessary to mitigate or prevent a threat to public health and that a change of scope, additional funding, and an exemption to the 12-month limit were required to perform such action.

On September 19, 2013, EPA issued an Action Memorandum approving a scope change, the expenditure of additional funds, and an exemption to the statutory funding and time limits on the Removal Action ("Action Memo"). The selected Removal Action consisted primarily of the excavation and off-site disposal of certain contaminated soils presently located at the Property.

On May 28, 2014, EPA issued an Action Memorandum approving a scope change on the Removal Action ("Action Memo II"). This change of scope was to provide bottled water to the residence affected by contaminated groundwater impacted by the contaminated soils on the Property. Hazardous substances in soils at the Property were determined to be responsible for contaminant vapor intrusion ("VI") into a commercial building on the Property and groundwater contamination that has impacted two private supply wells down gradient from the Property.

On January 20, 2015, EPA issued an Action Memorandum approving a scope change on the Removal Action ("Action Memo III"). This change of scope was to install a permanent connection to the affected residence to the Doylestown Township Municipal Authority water supply.

This Change of Scope proposes to install a permanent depressurization system to reduce indoor TCE levels in Building A to levels that pose no unacceptable risk to the tenants and their patrons.

The Site is on the NPL and is currently the subject of an ongoing Remedial Investigation by the Remedial Program.

At this time, the need for additional CERCLA funding is not needed. This Action Memorandum incorporates and supplements the previous Action Memoranda. Where information is unchanged from the previous documents, the reader is referred to that/those document(s).

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Physical Location/Site Characteristics

Please refer to attached September 2013 Action Memorandum.

2. Site Background

Please refer to attached September 2013 Action Memorandum.

3. Quantities and Types of Substances Present

EPA Region 3 Removal Program collected sub-slab and indoor air samples (Building A) in January and April 2015, and indoor air samples in June 2015. Results from the three sampling events were similar, with sub-slab TCE concentrations as high as 58,000 $\mu g/m^3$ and indoor as high as 27 $\mu g/m^3$.

EPA and ATSDR toxicologists reviewed the data and recommended that a permanent solution (e.g., negative pressure system) be installed to provide adequate ventilation of the sub-slab for the entire building.
For additional information, please refer to attached Action Memoranda.

4. National Priorities List

Please refer to attached September 2013 Action Memorandum.

5. State and Local Authorities' Roles

The OSC communicated with the Pennsylvania Department of Environmental Protection (PADEP) and the state does not have the resources to install the depressurization system at this time.

For more information, please refer to attached Action Memoranda.

B. Actions to Date

1. Previous Actions

Please refer to attached Action Memoranda.

2. Current Actions

Extended the water main and connected the affected residence to the Doylestown Township Municipal Authority water supply. This work was completed the week of September 21, 2015.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Please refer to attached Action Memoranda.

IV. ENDANGERMENT DETERMINATION

Please refer to attached September 2013 Action Memorandum.

V. EXEMPTION FROM STATUTORY LIMITS

Please refer to attached September 2013 Action Memorandum.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Action Description

Install a permanent depressurization system to reduce indoor TCE levels in Building A to 8 $\mu g/m^3$ or below, which level has been determined in this situation to pose no unacceptable risk to the tenants and their patrons.

B. Contribution to Remedial Performance

Please refer to attached September 2013 Action Memorandum.

C. Applicable or Relevant and Appropriate Requirements ("ARARs")

Please refer to attached September 2013 Action Memorandum.

D. Project Schedule

The depressurization system will be installed sometime in October 2015.

E. Estimated Costs

The cost of installing the depressurization system has been estimated not to exceed $50,000. There is currently enough money in the Removal Action Project Ceiling to cover the cost of the installation of the system.

VII. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Please refer to attached September 2013 Action Memorandum.

VIII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues pertaining to the Site.

IX. ENFORCEMENT

Please refer to attached September 2013 Action Memorandum.

X. COSTS

See Section VI.E above.

For additional information, please refer to attached Action Memoranda.

XI. RECOMMENDATION

This Action Memorandum represents a Change of Scope of the selected Removal Action for the Chem-Fab Site in Doylestown Borough, Bucks County, Pennsylvania, developed in accordance with CERCLA, as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

By signing this Action Memorandum, you are also hereby establishing the documents listed below as the Administrative Record supporting the issuance of this Action Memorandum, pursuant to Section 113 (k) of CERCLA and EPA Delegation No. 14-22. The document listed below is to be added to the existing Administrative Record, established when the September 19, 2013 Action Memo was signed.

1. Sub-slab and indoor air samples from Building A, collected in January, April and June 2015.
2. Email from EPA toxicologists, dated 9/24/15.

Because conditions at the Chem-Fab Site meet the Removal Action requirements of Section 300.415 of the NCP, 40 C.F.R. § 300.415, I recommend your approval of the proposed Removal Action. The total Removal Action Project Ceiling, if approved, will remain at $2,738,000. Of this, an estimated $2,100,00 comes from the Regional Removal Allowance. Please indicate your approval or disapproval below.

Action by the Approving Official:

I have reviewed the above-stated facts and based upon those facts and the information compiled in the documents described above, I hereby determine that the release or threatened release of hazardous substances at and/or from the Site presents or may present an imminent and substantial endangerment to the public health or welfare or to the environment. I concur with the recommended removal action as outlined and establish the document identified above as the administrative record supporting selection of this action.

APPROVED: Bonnie Gross **DATE:** 9/30/15

Bonnie G. Gross, Associate Director
Office Preparedness and Response
EPA Region 3

DISAPPROVED: _____ **DATE:** _____

Bonnie G. Gross, Associate Director
Office Preparedness and Response
EPA Region 3

Attachments:

A. September 19, 2013 Action Memorandum
B. May 28, 2014 Action Memorandum
C. January 20, 2015 Action Memorandum

APPENDIX C
PHOTOGRAPHIC DOCUMENTATION

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: CHEM-FAB	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE:
3/24/2014

PHOTO ID:
P1210172.JPG

DESCRIPTION:

SW corner of the site, behind main building, showing concrete removal area covered with visquine for the night.

DATE:
3/28/2014

PHOTO ID:
P1250007.JPG

DESCRIPTION:

Shows the excavation trench at the SW corner of the site, behind the main building after 4 loads of soil hauled away.

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE: 4/3/2014

PHOTO ID: P4030015.JPG

DESCRIPTION:

A second tank was discovered near the monitoring wells in the southern end of the site. This photo also shows the abandoned well which was uncovered.

DATE: 4/7/2014

PHOTO ID: P4070024.JPG

DESCRIPTION:

Shows the edge of excavated soils near the first tank found. These soils have a strong odor , dark staining, large areas of yellow soils and high VOC readings.

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE: 4/16/2014

PHOTO ID: P4160007.JPG

DESCRIPTION:

Shows WESTON personnel collecting soil sample CF-0414-ust-07 from excavator bucket, standing on the east side of excavation looking west.

DATE: 4/24/2014

Photo ID: P4240004.JPG

DESCRIPTION:

Tank #1 emptied of it's contents

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE: 4/29/2014

PHOTO ID: P4290022.JPG

DESCRIPTION:

Shows tank #9 and #11

DATE: 5/15/2014

SAMPLE ID: P5150013.JPG

DESCRIPTION:

Shows the new longer VE pipe being installed to fix the vapor extraction system where the pipe did not extend past the slab originally.

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE:
5/21/2014

PHOTO ID:

P5210024.JPG

DESCRIPTION:

Shows inside of tank 11 after contents was removed.

DATE:
5/27/2014

PHOTO ID:

P5270036.JPG

DESCRIPTION:

Shows the area around tank 11 after it was demolished.

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE: 6/3/2014

PHOTO ID: P6030046.JPG

DESCRIPTION:

1st test pit dug on the western side of the site going down to ~11 ft, groundwater encountered at ~8 ft. Samples SOIL-15A and SOIL-15B collected from this test pit.

DATE: 6/5/2014

Photo ID: P6050066.JPG

DESCRIPTION:

Totes and Drums marked with stickers for disposal.

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE: 6/6/2014

PHOTO ID: P6060009.JPG

DESCRIPTION:

The remaining excavation area, SE portion of the site, after being filled in and graded.

DATE: 6/16/2014

Photo ID: P6160023.JPG

DESCRIPTION:

Shows sump pump in front of the architects office after the installment of a new unit.

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE: 7/8/2014

PHOTO ID: P7080042.JPG

DESCRIPTION:

An additional underground tank was discovered in the southern corner of the main building under the removed slab.

DATE: 7/11/2014

Photo ID: P7110015.JPG

DESCRIPTION:

Plantings & mulch replaced along the eastern walkway.

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE: 8/25/2015

PHOTO ID: P7080162.JPG

DESCRIPTION:

Trenching along North West Street for drinking water main extension.

DATE: 8/25/2015

Photo ID: P7080166.JPG

DESCRIPTION:

Section of new water main and fire hydrant installed.

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE: 10/16/2015

PHOTO ID: P7080174.JPG

DESCRIPTION:

View of depressurization fan and guage (#1).

DATE: 10/16/2015

Photo ID: P7110175.JPG

DESCRIPTION:

View of depressurization fans and guages (#6 and #7).

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE: 10/16/2015

PHOTO ID: N/A

DESCRIPTION:

View of depressurization fan (#5).

DATE: 10/16/2015

Photo ID: N/A

DESCRIPTION:

System Two, Three, Four, Five gauges.

EPA REGION 3 - START
PHOTOGRAPHIC DOCUMENTATION LOG
CHEM-FAB

CLIENT: EPA Region 3	**TDD #:** W5-01-16-05-002
SITE NAME: Chem-Fab	**SITE LOCATION:** 300 North Broad Street, Doylestown, Pa

DATE:
7/8/2014

PHOTO ID:

P7080042.JPG

DESCRIPTION:

Southern side of site showing new chain link fence.